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BULLETIN
OF
A. & T. COLLEGE

Published by
**THE AGRICULTURAL AND TECHNICAL
COLLEGE OF NORTH CAROLINA**

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Issued Quarterly
GREENSBORO, NORTH CAROLINA
CALENDAR 1954-1955

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BULLETIN

OF THE

Agricultural and Technical College

OF NORTH CAROLINA Greensboro, N. C. 27411
(Co-Educational Institution)

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FIFTY-NINTH ANNUAL CATALOGUE 1953-1954

With Announcements for
1954-1955

Recognized as A STANDARD "A" GRADE COLLEGE
by the North Carolina Department of Education, the
Council of Education of the State of Pennsylvania,
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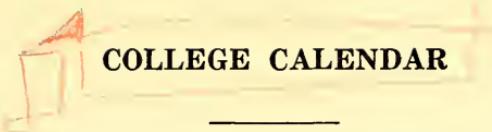
GREENSBORO, NORTH CAROLINA

1954

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1955

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COLLEGE CALENDAR

1954-1955

September 10-11, 1954—Pre-Session Faculty Meetings
September 12—Faculty Banquet
September 13-14—Freshman Orientation and Medical Examination
September 15—Freshman Registration
September 16—Sophomore Registration
September 17—Junior and Senior Registration
September 20—Classes Begin. Late Registration Fee of
\$5.00 will be enforced
September 27—Last day for making changes in schedules
December 15, 16, 17, 18—Fall Quarter Examinations
January 3, 1955—Registration of Freshmen and Sophomores
January 4—Registration of Juniors and Seniors
January 5—Classes Begin. Late Registration Fee of
\$5.00 will be enforced
January 12—Last day for making changes in schedules
March 14, 15, 16, 17—Winter Quarter Examinations
March 21—Registration of Freshmen and Sophomores
March 22—Registration of Juniors and Seniors
March 23—Classes Begin. Late Registration Fee of
\$5.00 will be enforced
March 30—Last day for making changes in schedules
May 23, 24, 25, 26—Spring Quarter Examinations
May 28—Senior Class Day
May 29—Baccalaureate
May 30—Commencement

HOLIDAYS

Thanksgiving—November 25, 26, 1954
Christmas Holidays—December 21, 1954-January 3, 1955
Easter Holiday—April 11, 1955

SPECIAL DAYS

Founder's Day—November 5, 1954
American Education Week—November 1-7, 1954
Religious Emphasis Week—January 23-26, 1955
Douglas' Birthday and Negro History Week (Joint Observance)—
February 6-11, 1955
Arbor Day (Special Program by School of Agriculture)—
February 18, 1955
National Negro Health Week—April 3-8, 1955

COLLEGE PUBLICATIONS

The Bulletin of the A. and T. College, published annually as the official catalogue of the College.

The Bulletin of the A. and T. College Summer Session, published annually as the official catalogue of the Summer School.

The Bulletin of the Graduate Division of the A. and T. College, published annually.

Annual Pictorial Issue of the Bulletin.

The A. and T. College Student Handbook, published biennially for general information and guidance of the students.

The Register, the official organ of the student body, published monthly. Edited and managed by the student body under the supervision of the College staff.

Bulletin of the A. and T. College, Non-Collegiate Trade, Vocational and Special Courses.

Alumni Newsletter, published quarterly.

Ayantee, Year Book of the Senior Class.

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THE
AGRICULTURAL AND TECHNICAL COLLEGE**

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JACK D. HOLSCLOW, Major, USAF	<i>Assistant PAS&T</i>
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FRANKLIN M. BROWN, Master Sergeant	<i>Sergeant Major</i>
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MILTON E. DODSON, CWO, USA	<i>Administrative Assistant</i>
JOSEPH COLQUITT, Master Sergeant	<i>Armorer</i>
CLEOPHUS HOGAN, Master Sergeant	<i>Supply Specialist</i>
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EUGENE H. WHITE, Sergeant First Class	<i>Maintenance Specialist</i>
ANSLEY W. JESSUP, Sergeant First Class	<i>Assistant Maintenance Specialist</i>
JOHN H. ATKINS, Sergeant	<i>Assistant Operation Specialist</i>

Officers of Instruction

PROFESSORS

FERDINAND D. BLUFORD	A. and T. College <i>President of the College</i>
----------------------------	--

A.B., Virginia Union University; B.Ped., Howard University; Graduate work, Columbia University; D.Ped., Virginia Union University. Dean Agricultural and Mechanical College of Alabama; Professor of Education, Kentucky State College; Professor of English, St. Paul Normal and Industrial School; Professor of English, A. and T. College; Dean, A. and T. College; Present position since 1925.

LITTLETON ALEXANDER ALSTON	1910 Albany Street <i>Chairman, Department of English</i>
B.A., Virginia State College; M.A., <i>ibid.</i> ; M.A., Columbia University; Professional Diploma in Teaching English, Ed.D., <i>ibid.</i> Former positions: Principal Elementary School, Stony Creek, Va.; Instructor of English, Sussex County Training School, Waverly, Va. Present position since 1946.	
ROBERT L. BAILEY	121 North Luther Street <i>Chairman, Department of Poultry</i>
B.S., Tennessee A. and I. State College; M.S., Iowa State College; Ph.D., <i>ibid.</i> Former positions: Instructor of Poultry, Tennessee A. and I. State College; Instructor of Poultry, West Virginia State College; Associate Professor in Poultry, West Virginia State College. Present position since 1953.	
WILLIAM M. BANKS	513 Broad Avenue <i>Zoology</i>
B.A., State University of Iowa; M.A., Ohio State University; Ph.D., <i>ibid.</i> Present position since 1952.	
WILLIAM M. BELL	College Campus <i>Coach-Director of Physical Education</i>
B.A., Ohio State University; M.A., Ohio State University. Further Study: Ohio State University. Former positions: Assistant Coach, Howard University; Director of Athletics and Head Coach, Claflin College; Director of Physical Education and Head Coach, Florida A. and M. College; Assistant Director of Physical Training Coach, Tuskegee Army Air Field. Present position since 1945.	
LEADIE M. CLARK	131 North Dudley Street <i>English</i>
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CAROLYN E. CRAWFORD	949 East Washington Street <i>Home Economics</i>
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WARMOTH T. GIBBS	420 North Dudley Street <i>Dean, School of Education and Science-Professor of Political Science</i>
A.B., Harvard University; Ed.M., <i>ibid.</i> ; Completed one year and a half beyond the Master's Degree, <i>ibid.</i> ; Professor of History; Dean, School of Education and Science. Present position since 1929.	
ARTIS P. GRAVES	612 Douglas Street <i>Chairman, Department of Biology</i>
B.S., Bluefield State College; M.S., University of Iowa; Ph.D., <i>ibid.</i> Former positions: Science Instructor and Head Coach, Morristown College; Science Instructor and Assistant Coach, Morris-Brown College; Chairman, Division of Science and Mathematics, Director of Science Workshop, Southern University. Present position since 1950.	

RALPH H. GRIFFIN	1416 Whilden Place <i>Forestry</i>
B.S., Virginia Polytechnic Institute, Blacksburg, Virginia; M.F., Yale University, New Haven, Connecticut. Former positions: Virginia Forest Service 1947-51. Present position since 1953.	
GEORGE VANCE GUY	519 Martin Street <i>Education</i>
Attended Wilberforce University, Indiana University; B.A., University of Illinois; M.A., University of Illinois; Requirements completed for the Ph.D. degree. Former positions: University of Illinois; Graduate Assistant; Instructor. Present position since 1951.	
ARTHUR F. JACKSON	1811 Benbow Road <i>Guidance</i>
B.S., Hampton Institute; M.A., Ed.D., Teachers College, Columbia University. Former positions: Teacher of Mathematics and Physical Education at Christiansburg Institute, Cambria, Va.; Director of Guidance, William C. Jason High School, Georgetown, Delaware. Present position since 1952.	
WILLETTA S. JONES	2109 Benbow Road <i>Dean, School of Nursing</i>
Connecticut College for Women; B.A., Nursing Education, Hunter College, New York; M.A., Teachers College, Columbia University. Former positions: Staff Nurse, Head Nurse, Lincoln Hospital, N. Y.; Clinical Instructor, Harlem Hospital, New York; Instructor in Nursing, Skidmore College, New York. Present position since 1953.	
ELMORE M. KENNEDY, JR., Major, USAF	A. and T. College <i>Air Science and Tactics</i>
B.S., Wilberforce University; University of Alaska; Attended Air Tactical School and Academic Instructor's Course, Air University. Present position since 1951.	
WADARAN L. KENNEDY	802 Ross Avenue <i>Dairy Husbandry</i>
B.S., University of Illinois; M.S. <i>ibid.</i> ; Ph.D., Pennsylvania State College. Former positions: Professor of Animal Husbandry, Virginia State College; Assistant Professor of Animal Husbandry, Langston University; Graduate Scholar in Dairy Husbandry, The Pennsylvania State College. Present position since 1936.	
JERALD M. MARTEENA	1900 Gorrell Street <i>Dean, School of Engineering and Professor of Mechanical Engineering</i>
B.M.E., Ohio State University; M.S., University of Michigan; Completed one year and one summer beyond Master's Degree, University of Michigan; Professor of Mathematics, A. and T. College. Present position since 1938.	
ISAAC H. MILLER, JR.	809 Ross Avenue <i>Biochemistry</i>
B.S., Livingston College; M.S., University of Wisconsin; Ph.D., <i>ibid.</i> Present position since 1950.	
JOHN C. MC LAUGHLIN	910 Benbow Road <i>Agricultural Economics and Rural Sociology</i>
B.S.A., A. and T. College; M.S., Cornell University, 1932. Former position: Alcorn A. and M. College. Present position since 1937.	
HOWARD T. PEARSALL	818 Ross Avenue <i>Chairman, Department of Music</i>
B.A., Fisk University; M.A., Western Reserve. Former positions: A. and M. College, Normal, Alabama; Cleveland, Ohio Public Schools; Storer College, Harper's Ferry, West Virginia; Tougaloo College, Tougaloo, Mississippi. Present position since 1950.	

CHARLES W. PINCKNEY	601 Julian Street <i>Industrial Education</i>
B.S., South Carolina State; M.S., University of Illinois; Ed.D. Pennsylvania State College. Former positions: Assistant Professor of Industrial Education at Delaware State College, Dover, Delaware. Present position since 1953.	
WILLIAM E. REED	2507 McConnell Road <i>Dean, School of Agriculture and Professor of Soils</i>
B.S., Southern University; M.S., Iowa State College; Ph.D., Cornell University. Present position since 1949.	
WAVERLY NATHANIEL RICE, JR.	1504 Gorrell Street <i>Chairman, Department of French</i>
A.B., Morehouse College; Diplome pour L'enseignement du francais a L'tranger, University of Toulouse, France; docteur de L'Universite de Toulouse. (Letters); University of Mexico, Summer. Present position since 1937.	
LEONARD H. ROBINSON	607 Julian Street <i>Chairman, Department of Social Science</i>
B.S., Wilberforce University; M.A., Atlanta University; Ph.D., Ohio State University. Former positions: Morehouse College, Elizabeth City State Teachers College, Lincoln High School, Fort Smith, Arkansas and Fayetteville State Teachers College. Present position since 1951.	
RANDA DAVENPORT RUSSELL	A. and T. College <i>Physical Education</i>
A.B., Kentucky State College; M.A., Ed.D., University of Michigan. Former positions: Kentucky Public Schools, Virginia State College, Spelman College. Present position since 1952.	
CHARLES W. SIMMONS	1510 Lindsay Street <i>History</i>
B.S., Alcorn A. and M. College; M.S., PhD., University of Illinois. Former positions: Registrar, Alcorn College; Instructor, Southern University; Associate Professor of History, Bluefield State College. Present position since 1952.	
ROY W. SORRELL, Major, Infantry	A. and T. College <i>Military Science and Tactics</i>
A.B., Howard University. Former positions: Army Officer since 1941, 366th Infantry Regiment. Present position since 1951.	
JAMES A. STEVENS	A. and T. College <i>Physical Education</i>
B.S., Kansas State Teachers College; M.S., University of Southern California. Former positions: Bishop College, Marshall, Texas; Prairie View Texas. Present position since 1952.	
CALVIN R. STEVENSON	1606 East Market Street <i>Acting Chairman, Department of Education</i>
B.S., Teachers College, Columbia University; M.S., <i>ibid</i> . Former positions: Elementary Teacher, Baltimore, Maryland; Technical Instructor, U. S. Army, Ass't. Detach. Comd., Med. Dept., U. S. Army. Present position since 1948.	
WILLIAM A. STREAT, JR.	1009 Ross Avenue <i>Chairman, Department of Architecture</i>
B.S., Hampton Institute; B.S., University of Illinois; S.M., Massachusetts Institute of Technology. Registered Architect of North Carolina. Former position: U. S. Engineers, Cheyenne, Wyoming. Present position since 1949.	
JAMES L. STUART.....	501 Bennett Street <i>Chairman, Department of Business</i>
B.S., Hampton Institute; M.C.S., Boston University; Ph.D., Ohio State University. Former positions: Assistant Professor of Business Administration, Kentucky State College and Southern University; Dean of Instruction, Albany State College. Present position since 1953.	

FREDERICK ALLEN WILLIAMS.....1013 Lindsay Street
Professor of Agricultural Economics and Dean of Graduate School
 B.S., A. and T. College; M.A., Michigan State; Ph.D., University of Wisconsin.
 Former positions: Henderson Institute, A. and T. College, Southern University.
 Present position since 1950.

BOOKER TALIAFERRO WHITE.....1602 Lindsay Street
Chemistry
 B.S., West Virginia State College; M.S., Ohio State University; Ph.D., Ohio State University. Former positions: Kittrell College; Coxe High School, Greenriver, N. C.; Brewer Jr. College, Greenwood, S. C.; Halifax County Training School, Weldon, N. C.; Principal Morristown College; State A. & M., Normal, Ala. Present position since 1947.

ASSOCIATE PROFESSORS

LATIS M. CAMPBELL.....1112 Pearson Street
Associate Director of Nursing
 B.S., Teachers College, Columbia University; M.A., *ibid*; R.N., Freedmen's Hospital, Washington, D. C. Former positions: Senior Assistant Nurse Officer, U. S. Public Health Service, Washington, D. C.; Assistant Superintendent of Nurses, Meharry Medical College; Public Health Nursing Consultant, Harlem Hospital, Department of Hospitals, City of New York. Present position since 1953.

THOMAS ARTHUR CLARK.....812 English Street
Social Studies
 B.S., City College of New York; M.S. in Education, *ibid*; M.A., Columbia University; Recreation Director Bureau of Recreation Department of Parks, New York City; Marine Captain in International Transportation, Erie Railroad. Present position since 1945.

GERARD E. GRAY.....2110 McConnell Road
Architectural Engineering
 B.S., A. and T. College; M.S., University of Illinois. Present position since 1950.

CLARENCE E. DEAN.....Rt. 1, Box 112, Gibsonville
Agricultural Education
 B.S., Hampton Institute; M. S. Iowa State College; Berry O'Kelly Training School. Present position since 1930.

CARRYE HILL KELLEY.....141 Beech Street
English
 B.S., A. and T. College; M.A. in History, University of Pennsylvania; M.A. in English, New York University. Present position since 1939.

JOHN B. MURPHY.....1016 Ross Avenue
Agronomy
 B.S., Prairie View College; M.S., Kansas State College. Instructor in Rural War Training, Prairie View College and at Nacogdoches, Texas; Teacher, Vocational Agriculture, Yoakum, Texas; County Agricultural Agent, Bellville, Austin County, Texas. Present position since 1946.

JAMES PENDERGRAST.....910 Ross Avenue
Chemistry
 B.S., A. and T. College; M.S., Howard University. Further study: University of Minnesota. Former position: Southern University. Present position since 1945.

BERT C. PIGGOTT.....1007 Lindsay Street
Physical Education
 B.S., University of Illinois; M.S., *ibid*. Present position since 1948.

ARMAND RICHARDSON 706 Tuscaloosa Street
Electrical Engineering

B.S., University of Pittsburgh. M.S., *ibid.* Present position since 1947.

H. CLINTON TAYLOR
Chairman, Department of Fine Arts

B.F.A., Syracuse University; M.A., Columbia University; Further Graduate study, Columbia University. Present position since 1927.

ARTHUR SYLVESTER TOTTEN A. and T. College Farm
Poultry

B.S., West Virginia State College; M.S., Michigan State College. Instructor poultry two years, Princess Ann College; Instructor, Southern University one year. Present position since 1946.

RALPH L. WOODEN 432 N. Dudley Street
Visual Aids Education

B.S., A. and T. College; Professional Teaching Diploma, Specialist School, U. S. Army Air Forces Technical Training School; M.A., Ohio State University; Graduate work toward Ph.D., *ibid.* Former positions: Instructor, North Street High School, Hagerstown, Md.; Dudley High School, Greensboro, N. C.; U. S. Army Ground School Instructor, Chanute Field, Illinois; Seymour-Johnson Field, N. C.; Rome Army Air Field, New York, U. S. Army. Present position since 1947.

JOHN LOVELLE WITHERS High Point, N. C.
Economics and Political Science

B.S., A. and T. College; M.A., Economics, University of Wisconsin; M.A., Political Science, University of Chicago. Present position since 1947.

ASSISTANT PROFESSORS

W. A. BLOUNT 721 N. Cameron Ave., Winston-Salem, N. C.
Education

B.S., A. and T. College; M.S., The Penn. State College. Former positions: Teacher Vocational Agriculture, Westminster, Cooksville, Md.; Assistant State Supervisor I.O.F. Present position since 1951.

PEARL G. BRADLEY 1425 E. Market Street
Speech

B.S., A. and T. College; M.A., University of Michigan; Instructor of English, J. B. Dudley High School. Present position since 1945.

TALMADGE BREWER 802½ Ross Avenue
Animal Husbandry

B.S., Prairie View College; M.S., Michigan State College. Present position since 1948.

BARBARA LEIGH BRYANT 421 Bennett Street
Physical Education

B.S., Long Island University; M.A., New York University. Former position: Instructor, Tennessee State University. Present position since 1953.

WALTER FERDINAND CARLSON, JR. 1501 Lindsay Street
Band-Instrumental Music Education

B.S., A. and T. College; M.M., University of Michigan. Former positions: Director of Music, Palmer Memorial Institute; Director of Bands, A. and T. College since 1946.

SYLVESTER L. CLARKE 1100 Salem Street
English

A.B., Shaw University; M.S., Cornell University. Former position: Instructor in the Beaufort County System. Present position since 1950.

ANN LAMB DAVIS.....	1103 Benbow Road <i>Clothing</i>
B.S., A. and T. College; A.M., Columbia University. Former positions: Clothing Instructor, Dudley High School, Greensboro, N. C.; North Carolina College, Durham, N. C. Present position since 1949.	
JAMES F. DAWKINS.....	900 Ross Avenue <i>Industrial Education</i>
B.S., A. and T. College; M.S., University of Pennsylvania.	
Gwendolyn T. Dickson.....	131 North Dudley Street <i>Commercial Education</i>
B.A., Samuel Huston College; M.C.S., Boston University. Further study at the University of Southern California. Former positions: Secretary to President, Samuel Huston College, Bursar-Business Manager, Samuel Huston College, Instructor of Commercial Education, St. Phillip's Jr. College. Present position since 1946.	
LEWIS C. DOWDY	612 Julian Street <i>Education</i>
A.B., Allen University; M.A., Indiana State Teachers College. Former positions: Supervising Principal of Winnsboro High School, Winnsboro, South Carolina. Present position since 1951.	
GEORGE C. GAIL.....	845 Ross Avenue <i>Industrial Arts</i>
B.S., A. and T. College; M.A., University of Minnesota. Present position since 1949.	
JAMES P. GOSS, JR., Major, USAF.....	528 Julian Street <i>Air Science and Tactics</i>
B.S., Boston University; M.S., Boston University; Further study at Harvard University. Former positions: Director of Lexington Boys' Club, Lexington, Massachusetts. Present position since 1951.	
WALTER RAY HARLEY, Captain, USAF.....	A. and T. College <i>Air Science and Tactics</i>
B.S., Morehouse College. Further study: Academic Instructor's Course, Air University. Former position: Science Teacher at Bell Street High School, Clinton, South Carolina. Present position since 1951.	
LEROY F. HARRIS.....	1007 Lindsay Street <i>Sociology</i>
B.A., Morehouse College; M.S.S.W., University of Wisconsin. Former positions: Leland College, Tougaloo College, Southern University, Alcorn College. Present position since 1949.	
CHARLES L. HAYES	1112 Duke Street <i>Education</i>
A.B., Leland College; Ed.M., Loyola University. Former positions: Assistant to Registrar, Leland College; Elementary School Teacher, Chicago Public School System. Present position since 1949.	
R. WINIFRED HEYWARD	443 North Dudley Street <i>Nursing</i>
B.S., Medical College of Virginia; Virginia Union University; M.A., Columbia University. Former positions: Head Nurse, St. Philip School of Nursing; Health Supervisor and Instructor, Maimonides Hospital; Clinical Instructor, Harlem Hospital; Staff Nurse, Veteran's Hospital.	
JACK D. HOLSCLOW, Major, USAF.....	A. and T. College <i>Air Science and Tactics</i>
D.C., Western States of Chiropractic; Attended Academic Instructor's Course, Air University, and Air Tactical School. Present position since 1952.	

LERoy F. HOLMES, JR.....	427 Bennett Street
	<i>Fine Arts</i>
B.A., Howard University; M.A., Harvard University. Former positions: Teacher of Public School Art, Arlington, Virginia; Instructor of Fine Arts, Florida A. and M. College. Present position since 1952.	
JOSHUA WILSON KEARNEY, JR.....	317 Beech Street
	<i>Dairy Manufacturing</i>
B.S., A. and T. College; M.S., Agriculture Extension, Michigan State; M.S., Dairy Manufacturing, <i>ibid</i> . Present position since 1953.	
HARDY LISTON, JR.....	330 West Bragg Street
	<i>Mechanical Engineering</i>
Knoxville College; B.S. in M.E., Howard University; Assistant Ordnance Engineer, Navy Department, Washington, D. C. Present position since 1946.	
ARIS H. MCNAIR	421 Bennett Street
	<i>Foods and Nutrition</i>
B.S., Hampton Institute; M.A., Teachers College, Columbia University. Former positions: Therapeutic Dietitian, Gouverneur Hospital, University Hospital, and Lenox Hill Hospital; Instructor of Foods and Nutrition, Southern University. Present position since 1953.	
NAN PHELPS MANUEL	501 Bennett Street
	<i>Mathematics</i>
B.S., Morgan State College; M.S., Howard University. Further study: New York University. Present position since 1950.	
AARON CARROLL MADRY.....	915 Omaha Street
	<i>Horticulture</i>
B.S., Ohio State University; M.S., <i>ibid</i> . Present position since 1952.	
KATHLEEN A. MANN	1112 Pearson Street
	<i>Assistant Professor of Nursing</i>
Howard University; B.S., New York University; M.A., <i>ibid</i> . Former positions: Staff Nurse, Bellevue School of Nursing; Assistant Supervisor and Clinical Instructor, Bellevue Hospital.	
MAXINE MCBRIER.....	1021 Lindsay Street
	<i>Foreign Languages</i>
B.A., Kansas University; M.A., <i>ibid</i> . Further study at the University of Minnesota, National University of Mexico. Former position: Prairie View A. and M. College, Prairie View, Texas. Present position since 1952.	
CLEO MILAN MCCOY.....	1009 Martin Street
	<i>Religious Education</i>
B.A., Paine College; B.D., School of Religion, Howard University; Interne Chaplain, National Training School for Boys, Washington, D.C.; Qualifications Examiner, United States Civil Service Commission, Washington, D. C.; Personal Technician, Treasury Department, Bureau of the Public Debt, New York Regional Office, New York City. Present position since 1946.	
PERCY MCWAIN.....	601 Broad Avenue
	<i>Chemistry</i>
A.B., Ohio State University; M.A., <i>ibid</i> . Former positions: Atmospheric Nitrogen Corp., Ironton, Ohio; Research Assistant, Ohio State University Research Foundation. Present position since 1948.	
DORSEY L. MORGAN.....	501 Bennett Street
	<i>Physics</i>
B.S., Howard University; M.S., University of Chicago. Former positions: Assistant Physicist, Ft. Monmouth, N. J., for U. S. War Department; Instructor in Physics, Southern University, Baton Rouge, La. Present position since 1949.	

ALMA I. MORROW.....	1001 Lindsay Street <i>Librarian</i>
B.S. in Library Science, Hampton Institute; A.B., Howard University; M.S. in Library Science, Columbia University. Present position since 1936.	
LOUISE M. E. NIXON.....	409 N. Dudley Street <i>Mathematics</i>
B.S., A. and T. College; M.A., New York University, School of Education. Former positions: Willis Hare High School, Pendleton, N. C.; Mathematics and Science Teacher; Mathematics Instructor, J. B. Dudley High School, Greensboro, N. C.; Mathematics Instructor, A. and T. College. Present position since 1947.	
KATRINA M. PORCHER.....	1013 Benbow Road <i>Home Economics</i>
B.S., Hampton Institute; Montclair, N. J. State Teachers College, summer; M.A., Columbia University. Former positions: Holloway High School, Murfreesboro, Tenn., Williston Industrial School, Wilmington, N. C. Present position since 1947.	
GLEN F. RANKIN.....	803 Julian Street <i>Agricultural Education</i>
B.S., A. and T. College; M.S., Pennsylvania State College. Former positions: Teacher of Vocational Agriculture Aggrey Memorial High School, Rowan County; Assistant Supervisor of the Veterans Farmer Training Program. Present position since 1950.	
JOHN C. ROBINSON, Major, Infantry.....	A. and T. College <i>Military Science and Tactics</i>
B.S., Howard University. Present position since 1951.	
GEORGE C. ROYAL, JR.....	1809 Benbow Road <i>Bacteriology</i>
B.S., Tuskegee Institute; M.S., University of Wisconsin. Former positions: Instructor of Bacteriology, Tuskegee Institute; Research Assistant, Ohio Agriculture Experiment Station. Present position since 1952.	
GLADYS WILLIAMS ROYAL.....	1809 Benbow Road <i>Chemistry</i>
B.A., Natural Science, Dillard University; M.S., Tuskegee Institute. Further study: Ohio State University. Former positions: Research Assistant, G. W. Carver Foundation; Teaching Assistant, Tuskegee Institute; Teaching Assistant, Ohio State University. Present position since 1953.	
BOOKER TALLIFERRO SIMPSON.....	716 East Bragg Street <i>Chemistry</i>
B.S., Claflin College; M.S., State University of Iowa. Former positions: Teacher of Chemistry and Mathematics, High School, Anderson, South Carolina; Teacher of Chemistry and Mathematics, Lancaster, South Carolina; Teacher of Mathematics, Hampton, Virginia (High School). Present position since 1948.	
WILLIAM SPIGENER.....	815 Tuscaloosa Street <i>Zoology</i>
B.S., Lincoln University; M.S., Catholic University of America; Statistician, War Department. Present position since 1946.	
THEODORE A. WILSON, Major, USAF.....	A. and T. College <i>Air Science and Tactics</i>
Virginia Union University; attended Air Tactical School, and Academic Instructor's Course, Air University. Present position since 1952.	
CHARLES RUSSELL WYRICK.....	1515 East Market Street <i>English</i>
B.S., A. and T. College; M.A., New York University. Former position: Instructor Ammunition School, Aberdeen, Maryland. Present position since 1948.	

INSTRUCTORS

HARVEY R. ALEXANDER.....	1006 Ross Avenue <i>Accounting</i>
	B.S., University of Illinois; M.S., Duquesne University. Former position: Instructor of Accounting, Southern University, Baton Rouge, Louisiana. Present position since 1950.
MELVIN T. ALEXANDER.....	817 Duke Street <i>Radio and Television</i>
	B.S., A. and T. College. Former positions: Head Radio Service Department, Western Auto Supply Co.; Checker of Electronic Equipment, Sun Ship Yard. Present position since 1951.
ISAAC BARNETT.....	A. and T. College <i>Driver Education</i>
	B.S., A. and T. College; further study, General Motors Technical Institute. Former position: Instructor, Wm. Penn High School, 1946. Present position since 1947.
LEWIS E. BARBEE.....	A. and T. College <i>Agronomy</i>
	B.S., Virginia State College; M.S., Perdue University. Present position since 1950. Present position since 1951.
HARRIETTE LEE BELL.....	927 Moody Road <i>English</i>
	B.S., Miner Teachers College; Further study, Ohio State University. Former positions: Instructor, Florida A. and M. College; Teacher, Washington, D. C. Public Schools. Present position since 1950.
DAVID MCCOY BRADLEY.....	802A Tuscaloosa Street <i>Sheet Metal</i>
	Certificate, Hampton Institute. Former position: Instructor of Sheet Metal, N. Y. A., St. Louis. Present position since 1953.
SUDIE J. BRADLEY.....	802A Tuscaloosa Street <i>Mathematics</i>
	B.S., Virginia State College; M. A., New York University. Former positions: Public Schools of Virginia; Virginia State College. Present position since 1953.
JEAN MARIE BRIGHT.....	1008 Benbow Road <i>English</i>
	B.S., A. and T. College; M.A., Columbia University. Former positions: High School Teacher of English, Trenton and Hillsboro, N. C.; American Red Cross Staff Assistant, Philippines and Japan; Educational Research Worker, New York City. Present position since 1951.
ISAIAH HAYWOOD BROWN.....	403 Dudley Street <i>Education</i>
	B.S., Howard University; M.A., Teachers College, Columbia University. Further study: New York University and Teachers College, Columbia University. Former positions: Assistant Professor of Education at Alabama State College. Present position since 1953.
MATTHEW BROWN.....	1108 Salem Street <i>Physical Education</i>
	Ohio State University. Present position since 1948.
NATHAN E. BROWN.....	843 Ross Avenue <i>Carpentry</i>
	B.S., A. and T. College, M.S., <i>ibid</i> . High School Vocational teacher for six years. Present position since 1947.

JOHN H. BUNCH.....	A. and T. College <i>Chemistry</i> B.S., Hampton Institute. Present position since 1951.
G. L. BURGE.....	1719 McConnell Road <i>Bricklaying</i>
C. L. CANNON.....	1402 McCornell Street <i>Laundry Management</i> B.S., Alcorn A. & M. College. Present position since 1946.
ETHBERT S. CARR.....	524 Julian Street <i>Agricultural Engineering</i> Hampton Institute; B.S. in Agriculture, Ohio State; further study at Cornell University. Former position: Instructor at Prairie View State College. Present position since 1945.
CYNTHIA C. CHIVERS.....	1212 Pearson Street <i>Physical Education</i> B.S., Hampton Institute; M.A., New York University. Former position: Instructor at Texas College, Tyler, Texas. Present position since 1952.
ERNESTINE CROWDER COMPTON.....	2014 Lutheran Street <i>Physical Education</i> B.S., Central State. Present position since 1953.
ESTELLE WHITTED CURLEY.....	832 Ross Avenue <i>Commercial Education</i> B.S., Winston-Salem Teachers College. Further study: A. and T. College. former position: Morningside High School. Present position since 1953.
MARQUIS L. COUSINS.....	149 Beech Street <i>Automobile Mechanics</i> Certificate of Auto Mechanics, A. and T. College. Instructor of auto. mech. in U. S. Army for two years. One year at General Motors School, Detroit, Mich. Present position since 1947.
CHARLES C. DAVIS.....	A. and T. College <i>Mathematics</i> B.S.-E.E., Howard University. Present position since 1946.
CLYDE DEHUGULEY.....	731 Pearson Street <i>Shoe Repairing, Leather Works</i> Graduate Tuskegee Institute; Instructor in shoe repairing, Kentucky State College. Present position since 1924.
DOROTHY M. ELLER.....	427 Bennett Street <i>English</i> B.S., Boston University; M.A., <i>ibid</i> . Further study: Columbia and Boston Universities. Former positions: Maryland State College; State A. and M. College, Orangeburg, S. C. Present position since 1953.
WILLIAM H. GAMBLE.....	A. and T. College <i>Dean of Men and Instructor of Education</i> B.S., A. and T. College. Further study, University of Pittsburgh and Columbia University. Present position since 1940.
EDWIN T. GOFORTH.....	310 Beech Street <i>Economics</i> B.S., West Virginia State; Master of Letters, University of Pittsburgh. Present position since 1953.

RUDOLPH GRANDY.....	A. and T. College <i>Biological Sciences</i>
B.S., A. and T. College; Cornell University, further study; Instructor in Horticulture, Southern University, Scotlandville, La. Present position since 1942.	
ALICE C. JOHNSON GOSS.....	528 Julian Street <i>Nursery Education</i>
B. S., Boston University; Ed.M., <i>ibid.</i> Former positions: Nursery School and Kindergarten Teacher in Boston, Mass., Instructor at Virginia Union University. Present position since 1951.	
ANNE C. GRAVES.....	612 Douglas Street <i>Education</i>
A.B., Morris Brown College; M.A., University of Chicago; Further study at University of Chicago. Former positions: Registrar, Morris Brown College; Instructor English and Speech at Morris Brown College. Present position since 1951.	
JOE E. GRIER.....	822 Benbow Road <i>Poultry Husbandry</i>
B.S., A. and T. College; M.S., University of Illinois. Former position: Huntersville High School. Present position since 1952.	
ALLEGRA GRIMES.....	509 Bennett Street <i>English</i>
B.S., Central State; M.A., Columbia University. Present position since 1953.	
LEON H. HARDY.....	909 Lindsay Street <i>Photography</i>
B.S., A. and T. College; Further study, <i>ibid.</i> ; Washington Institute of Photography, Washington, D. C.	
HERBERT M. HEUGHAN.....	2313 Charlotte Street <i>Mathematics</i>
B.S., Hampton Institute; M.A., Hampton Institute. Former positions: Hampton Institute, Virginia State College, Extension Teacher, Mary N. Smith High School. Present position since 1948.	
ALFRED HILL, JR.....	822 Tuscaloosa Street <i>Entomology</i>
B.S., Prairie View College; M.S., Colorado A. and M. College. Former positions: Instructor, Trinity County Vocational School, Groveton, Texas; Oakland Vocational Institute, Marlin, Texas. Present position since 1952.	
MATTHEW B. HILL.....	427 Bennett Street <i>Business Education</i>
B.S., Virginia Union University. Further study: Temple University. Former positions: Principal, Bena Hayes Elementary School; Instructor, William Penn Business Institute; Instructor, Philadelphia Public School System. Present position since 1953.	
MAJOR B. HOLLOWAY.....	622 Broad Avenue <i>Auto Mechanics</i>
Certificate, A. and T. College; Instructor Mechanics School, United States Army, 1941-45. Present position since 1945.	
BEN EDWARD HOLT.....	901 Lindsay Street <i>English</i>
B.A., Howard University; M.A., New York University. Present position since 1950.	
MAYME WILKINS HOLT.....	901 Lindsay Street <i>English</i>
B.A., Howard University; further study at Howard University; M.A., Catholic University, Washington, D. C. Former position: Bowman High, Mississippi. Present position since 1952.	

V. ANTHONY HORNE.....	142 North Dudley Street <i>History</i>
A.B., Tougaloo College; M.S.E., University of Notre Dame. Further study, <i>ibid.</i> Former position: Jackson College, Jackson, Mississippi. Present position since 1950.	
FLORENCE B. IRVING.....	A. and T. College <i>Business Administration</i>
A.B., Spelman; M.B.A., University of Chicago. Present position since 1949.	
JAMES JENKINS, JR.....	927 West McCulloch Street <i>Carpentry</i>
B.S., Hampton Institute. Present position since 1950.	
JAMES T. JONES.....	415 Banks Street <i>Electrical Engineering</i>
B.S., A. and T. College. Former position: Instructor of Electronics and Radar, The Ordnance School, Aberdeen Proving Ground, Maryland. Present position since 1952.	
GERTRUDE A. JOHNSON.....	506 Logan Street <i>English</i>
A.B., Shaw University. Further study: Upsala College, East Orange, N. J.; A. and T. College, Greensboro, North Carolina. Former positions: Teacher of English and French, Spring Hope, North Carolina; Teacher of French and History, Smith- field, North Carolina; Teacher of French, History and English, Gibsonville, North Carolina. Present position since 1953.	
W. MALCOLM JOHNSON, JR.....	717 Broad Avenue <i>American History</i>
A.B., Morgan State College; M.A., Catholic University. Former positions: Instruc- tor for U. S. Army; High School Teacher in Maryland School System. Present position since 1948.	
HAROLD CLINTON LAWTON.....	409 North Dudley <i>Tailoring</i>
B.S., Hampton Institute. Former position: Mel Walker Trade School, Chicago, Illinois. Present position since 1952.	
CALVIN B. LECOMPTE	1800 East Market Street <i>English</i>
A.B., Catholic University; M.A., <i>ibid.</i> Further study: University of Pennsylvania. Former positions: Public Schools, Washington, D. C.; Lincoln University, Pennsyl- vania; Southern University; Central State College. Present position since 1958.	
LORENO MEBANE MARROW	A. and T. College <i>English</i>
B.S., A. and T. College; M.A., New York University. Present position since 1948.	
EDDYE McCARTY.....	A. and T. College <i>Textile and Clothing</i>
B.S., Southern University; M.S., Iowa State College. Present position since 1950.	
JOSEPH H. MEYERS.....	315 Spring Street <i>Plumbing</i>
*WALLACE L. MITCHELL.....	422 N. Dudley Street <i>Carpentry</i>
B.S., Shaw University; B.S., A. and T. College. Present position since 1935.	
CALVIN F. MORROW.....	709 Julian Street <i>Shoe Repairing</i>
B.S., A. and T. College. Present position since 1950.	

*Leave of Absence. Further study 1953-1954.

PHILIP BLISS MOORE, JR.	421 Bennett Street <i>Mathematics</i>
B.S., Roosevelt College; M.S., DePaul University. Present position since 1951.	
EDWINA T. MURPHY	1016 Ross Avenue <i>French-Spanish</i>
A.B., Fisk University. Further study: Columbia University, Anderson High School, Austin, Texas; Toloston College, Austin, Texas; Summer High School, Kansas City, Kansas. Present position since 1946.	
MURRAY L. NEELEY.....	2115 McConnell Road <i>Physical Education</i>
B.S., Florida A. and M. College; M.A., Ohio State University. Former positions: Instructor, Jones High School, Orlando, Florida; Instructor, Industrial High School, West Palm Beach, Florida; Assistant Coach, Florida A. and M. College. Present position since 1950.	
JAMES THOMAS NORRIS, JR.....	809 King Street <i>Automobile Mechanics</i>
Certificate, A. and T. College; General Motors Technical Institute. Former position: Wm. Penn High School, High Point. Present position since 1947.	
FORREST J. PARKS.....	614 Benbow Road <i>Painting and Decorating</i>
B.S., Hampton Institute. Former positions: Maintenance Department, Hampton Institute; Instructor of Painting and Decorating, Hampton Institute; Instructor, Maryland Vocational School; General Painting and Decorating Contractor, Hampton, Virginia. Present position since 1953.	
WILLIAM JOHN PENN.....	215 N. Dudley Street <i>Band Music</i>
B.Mus., University of Michigan; M.Mus., University of Michigan. Former position: Instructor of Music, Florida A. and M. College, Tallahassee, Florida. Present position since 1951.	
YVONNE M. PORTER.....	A. and T. College <i>Music</i>
Bachelor of Music, University of Rochester. Present position since 1952.	
ANITA MEARES RIVERS.....	301 Beech Street <i>Mathematics</i>
B.S., Hampton Institute; M.A., University of Michigan. Former positions: Public Schools, Williamsburg, Va.; Maryland; Greensboro, N. C.; State Teachers College, Elizabeth City; Bennett College. Present position since 1950.	
LEWIS RICHARDS.....	2113 Benbow Road <i>Brick Masonry</i>
B.S., Hampton Institute. Former position: Maryland School of Building Trades. Present position since 1952.	
ROSEMOND J. SATTERWHITE.....	A. and T. College <i>Music</i>
B.S., West Virginia State College; M.A., Columbia University. Former positions: Tivoli High School, DeFuniak Springs, Florida; Claflin University, Orangeburg, South Carolina; Lane College, Jackson, Tennessee. Present position since 1951.	
ELLIS WYMAN SCOTT	818 Ross Avenue <i>Mathematics</i>
B.S., Southern University; M.S., University of Iowa. Former positions: Actuary, Dunbar Life Insurance Company, Cleveland, Ohio; Instructor, Mathematics Department, Southern University, Baton Rouge, Louisiana. Present position since 1953.	

RICHARD D. SKEETE, JR.....727 Pearson Street
Art

B.S., Massachusetts School of Art; Ed.M., Boston University. Further study: Boston Museum of Fine Arts and the Museum School. Former positions: Virginia Union University; Teacher of Art and Allied Subjects, Boston Public Schools; Registrar-Instructor of Art and Social Studies, Palmer Memorial Institute, Sedalia, N. S. Present position since 1953.

CLEMMENT B. SMITH.....2715 Yanceyville Rd.
Dry Cleaning

National Association of Dry Cleaning Institute. Present position since 1949.

JESSE RICHARD SPIGHT.....819 Broad Avenue
Tailoring

B.S., Hampton Institute; M.A., Hampton Institute, Industrial Education; Certificate for designing in clothing, American Gentlemen's Designing School, New York City. Former positions: Assistant to designer, Pascal's Tailoring, New York City; Instructor of tailoring, St. Emma's Military Academy, Rock Castle, Va. Present position since 1951.

VEDA J. STROUD.....1425 East Market Street
Commercial Education

B.S., A. and T. College; M.A., Columbia University. Present position since 1942.

ANDREW W. WILLIAMS.....A. and T. College
Machine Shop Practice

Certificate Machinist Trade School, Chicago; B.S., A. and T. College. Former position: Instructor in Machine Shop Practice, U. S. Navy. Present position since 1946.

RAYMOND P. WILLIAMS.....1204 Kivett Drive, High Point, N. C.
Welding

A. and T. College Vocational School of Carpentry; Washington State Vocational School of Welding. Certified by "American Bureau of Shipping Surveyors." Instructor of Industrial Arts, Palmer Memorial Institute. Present position since 1945.

STATE AGRICULTURAL EXTENSION SERVICE PERSONNEL

R. E. JONES, B.S., M.S.....*State Extension Agent*

J. W. JEFFRIES, B.S.....*Assistant State Extension Agent*

M. R. ZACHARY, B.S., M.Ed.*District Farm Agent*

J. A. SPAULDING, B.S.....*District Farm Agent*

MRS. DAZELLE F. LOWE, B.S.*District Home Agent*

MISS WILHELMINA R. LAWS, B.S.*District Home Agent*

MRS. RUBY C. CARRAWAY, B.S.*District Home Agent*

WILLIAM C. COOPER, B.S., M.S.*State 4-H Club Specialist*

MRS. IDELL JONES RANDALL, B.S.*Assistant 4-H Club Specialist*

ROBERT LOUIS WYNN, B.S., M.S.*Extension Dairy Specialist*

S. J. HODGES, B.S.*Extension Agronomy Specialist*

MISS GENEVIEVE M. KYER, B.S., M.S.*Clothing and Home Management*

MRS. BESSIE B. RAMSEUR, B.S., M.A.*Subject Matter Specialist Foods and Nutrition*

MISS H. BLANCHE STEPHENS, Diploma.....	<i>Secretary to State Agent</i>
MRS. ROSALIE M. WOODEN, Diploma.....	<i>Secretary to Extension Supervisors (Women)</i>
MISS R. IRENE PETERSON, B.S.....	<i>Secretary to Extension Supervisors (Men)</i>
MRS. DOROTHY S. CAMERON, B.S.....	<i>Secretary to Extension Specialists (Women)</i>
MISS RUBY JOAN WILLIAMS, B.S.....	<i>Secretary to Extension Specialists (Men)</i>
MRS. ROSA T. WINCHESTER, B.S.....	<i>Home Agent, Guilford County</i>
B. A. HALL, B.S.....	<i>County Agent, Guilford County</i>
THOMAS W. FLOWERS, B.S., M.S.....	<i>Extension Horticultural Specialist</i>

HISTORY OF THE COLLEGE

The College was established as the "A. and M. College for the Colored Race" by an act of the General Assembly of North Carolina, ratified March 9, 1891. The object of the institution is declared by the act to be for the instruction in practical agriculture, the mechanic arts and such branches of learning as related thereto, not excluding academic and classical instruction.

By an act of the state legislature in 1915 the name of the college was changed to The Agricultural and Technical College of North Carolina. In 1939, the legislature authorized the College to grant the Master of Science degree in certain fields and to negotiate out of state aid scholarships to students desiring graduate work in fields not now obtainable at A. and T. College, but offered at the University of North Carolina.

The citizens of Greensboro donated fourteen acres of land and \$11,000 to be used in construction of buildings. In 1893 this was supplemented by an appropriation of \$10,000 by the General Assembly. Dudley Hall was completed in 1893 and the school opened in the fall of that year at Greensboro. Previously, it had operated as an annex to Shaw University in Raleigh, N. C.

The management and control of the College and the care and preservation of all its property are vested in a Board of Trustees, consisting of sixteen members, who are elected by the General Assembly, or appointed by the Governor, for a term of six years.

The Trustees, by act of the Legislature, have power to prescribe rules for the operation of the College; to elect the president, instructors, and as many other officers and assistants as they shall deem necessary; and have general and entire supervision of the establishment and maintenance of the College.

The financial support of the College for the payment of salaries and purchase of apparatus and equipment is derived from the United States, under an Act of Congress known as the Morrill Act, passed August 20, 1890. This act makes an annual appropriation for each State and Territory for the endowment and support of colleges for the benefit of agriculture and mechanic arts, to be applied "only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematics, physical, natural, and economic sciences with special reference to their application in the industries of life and the facilities of their instruction."

The College also receives an appropriation from the State for general maintenance, which cannot be provided for under the laws governing the use of Federal appropriations.

The College holds institutional membership in the Association of Colleges and Secondary Schools, Association of American Colleges, The American Council on Education, The Association of Land-Grant Colleges and the North Carolina College Conference. It is on the approved list of the American Medical Association, and the Southern Association of Colleges and Secondary Schools.

The work of the College is carried on through six major divisions or schools. These are the School of Agriculture, the School of Education and Science, the School of Engineering, the Technical Institute, the Summer School, and the Graduate School.

The offerings, requirements and objectives of these schools are explained in the pages that follow. Special bulletins on the Technical Institute, the Graduate School, and the Summer School are published by the College. A copy of either may be had on request.

THE COLLEGE BUILDINGS

DUDLEY MEMORIAL BUILDING

On January 27, 1930, the original Dudley Hall was destroyed by fire. The erection of the New Dudley Hall was undertaken immediately thereafter and on February 15, 1931, it was occupied. This is a fine fire-proof structure of three stories, larger than the old building and better suited to meet the needs of a modern college. It contains classrooms, assembly rooms, library, offices for the President, Dean of the School of Education and Science, Treasurer, Registrar, Bursar, and other administrative officers.

LIBRARY

The Library occupies the entire second floor of the Dudley Administration Building. It contains 51,625 volumes and receives 250 current periodicals, representing various departments of the college and 23 newspapers. Books have been carefully selected with a view to facilitating instruction and research.

All students registered in the College are entitled to full reference use of the library. Subject to certain rules and regulations, students may withdraw library books and materials to use in the library or for home use by presenting their photographic identification cards.

The Library Hours: The Library is open Monday through Friday from 8:00 a.m. to 5:00 p.m. and 6:30 to 9:30 p.m. except Saturday, when the hours are from 9:00 a.m. to 12:00 noon and 1:30 to 4:30 p.m.

NORTH DORMITORY

The North Dormitory is a three-story building which contains rooms for about 70 women students.

MORRISON HALL

Morrison Hall is a fireproof, three-story building with basement. It contains rooms for 130 women students.

ANNIE W. HOLLAND HALL

Annie W. Holland Hall is a dormitory for women. It was completed in 1938 and is named in honor of Mrs. Annie W. Holland, who for a long period was State Supervisor of Colored Elementary Schools in North Carolina. The building is fireproof and is located in one of the most beautiful sections of the campus. It is constructed to house 155 students.

VANSTORY HALL

Vanstory Hall, formerly known as the South Dormitory, is a three-story, brick building, which contains rooms for 92 students.

NOBLE HALL

Noble Hall is a fireproof, three-story structure, with basement. It contains laboratories for botany, dairy products, zoology, and geology. Classrooms and offices for the Dean, School of Agriculture, and the heads of divisions are provided.

CROSBY HALL

Crosby Hall, one of the few remaining historic buildings on the campus, is a three-story structure. It houses on the ground floor auto mechanic shops, maintenance and the College Post Office. The first floor contains bookstore, and classrooms. The third floor houses the Departments of Fine Arts.

ALEXANDER GRAHAM HALL

The Alexander Graham Hall is a three-story fireproof structure located near U. S. Highway 70. The building was constructed in 1939 with funds appropriated by the State and the Federal Emergency Administration of Public Works and contains the following laboratories and shops; Physics, Engineering, and Industrial Arts. The office of the Dean of the School of Engineering is also located in this building.

RICHARD B. HARRISON AUDITORIUM

The Richard B. Harrison Auditorium, completed in 1940, is named in honor of the noted actor and teacher who gained world renown as "De Lawd" in the great stage production of 1930, *The Green Pastures*. Previously Richard B. Harrison had been well and favorably known to the students and constituents of the A. and T. College as a teacher of dramatics and public speaking, a position he had held at the College for a number of years and relinquished to accept the part in the play mentioned above.

This auditorium, one of the largest and best equipped of its kind in the State, contains in addition to the main assembly room, special rooms for dramatics, band and music classes, and offices for the music and dramatic departments. It is the center for public programs, religious services and extracurricular activities.

MURPHY HALL

Murphy Hall is a one-story fireproof building which contains the cafeteria, the kitchen, and the refrigeration plant. The cafeteria has seating capacity for 800 students. It is one of the most beautiful buildings of its kind to be found in the State.

FLORENCE GARRETT PRACTICE HOUSE

The Florence Garrett House is the home economics practice house. The building was named in honor of Mrs. Florence Garrett who was among the first women students to attend the College, and who bequeathed her small estate to the College as a beginning of an endowment. The Practice House is a two-story brick structure, conveniently located and adequately constructed to meet the needs of the home economics students.

NORTH CAMPUS

In the fall of 1946, the College was successful in purchasing the military hospital area of the local army overseas Replacement Depot. This plot comprises about seventy-five acres of improved land and is one block north of the main campus.

This new area has been designated the North Campus. Some of the buildings are being used for classrooms, and others for offices and administrative purposes. Physical Education classes for men are held in the recreation hall, and other classes are conducted in various buildings.

The former army administration headquarters have been converted into offices for the Air and Army ROTC headquarters.

CHARLES A. HINES HALL

Charles A. Hines Hall, constructed in 1950, is named in honor of the Chairman of the Board of Trustees. It is a modern, four-story, fireproof, brick structure and houses the Department of Chemistry. It has an auditorium, with a seating capacity of 155, ten classrooms, seven student laboratories, six research laboratories, and a reading room. The building is equipped to handle courses in General Chemistry, Analytical Chemistry, Organic Chemistry, Biochemistry, and Physical Chemistry.

AUSTIN W. CURTIS HALL

The women's dormitory is a modern three-story structure with basement facilities which include a beautiful recreation room, kitchenette, beauty room, and laundry room. This building has a spacious lounge on the first floor which has modernistic furnishings. The building has seventy-four student rooms which are furnished with furniture designed for individual comfort and enjoyment. A guest room is also included in this dormitory located in the area adjacent to Annie W. Holland Hall.

W. KERR SCOTT HALL

Scott Hall is the first of the permanent buildings erected on North Campus. Completed and furnished in 1951 at the cost of nearly \$2,000,000, it is the largest building on the campus and one of the largest, most modern and beautiful buildings of its kind in the South. It contains club and recreation rooms, lounges, baggage rooms, play areas, and living quarters for 1,010 students as well as apartments for counselors and supervisory personnel.

THE PRESIDENT'S HOME (THE OAKS)

The President's Home (The Oaks). The President's home is a two-story brick structure of modified Georgian architecture which was completed and occupied in 1950. It is nestled under a group of massive oaks in the northwestern corner of the main campus and is beautifully landscaped. The home is also situated to provide a commanding view of the main campus entrances.

JULIAN PRICE HALL

The trades building was constructed in 1951 and is located on North Campus. It is a modern fireproof structure with facilities for training in; auto mechanics, cabinetmaking, upholstering, carpentry, ceramics, drafting, electric wiring, machine shop, masonry, photography, plumbing, radio and television servicing, sheet metal, shoe repairing, tailoring, welding, painting and decorating.

In addition to the eighteen shops and laboratories, the building contains classrooms for related instruction, projection room, reading room and office of the dean of the Technical Institute.

THE COLLEGE GYMNASIUM

A new gymnasium was constructed in 1953. The main arena includes two large basketball courts which permit the playing of two basketball games at the same time. Seating facilities will accommodate more than 3,000 spectators. Included in the main arena is a modern press box with broadcasting facilities.

The Department of Physical Education is housed in offices located in the front of the building. In the rear will be located a large swimming pool, a combination dance and individual physical education class and activity room, together with a training room, class and varsity locker rooms.

CENTRAL HEATING PLANT

The heating plant, erected in 1952, is located on the south side of the campus on a railway siding. It contains two (2) 30,000 lbs. per hr. steam boilers with the latest mechanical equipment including complete fuel and ash handling systems. The plant, including the 150 ft. radial brick chimney is designed for additional capacity that will be installed as need arises. The plant furnishes steam and hot water to all the buildings on the campus using these services through approximately 8,500 feet of under-ground distribution system and tunnels.

LAUNDRY AND DRY CLEANING PLANT

A modern fireproof structure located near the center of the main campus. These plants are both modernly equipped to adequately serve the students and faculty of the college. A complete course of instruction is offered in the latest methods of Laundry Management and Dry Cleaning.

THE COLLEGE FARMS

The college has 593 acres of farm land on which there has been developed a Poultry Farm, Dairy Farm, Piggery, Beef Cattle Farm and a General Farm.

The Poultry Farm occupies twenty acres. The buildings consist of a commercial laying house with a capacity of 1200 layers, breeding house for 600 birds; two broiler houses with a yearly capacity of 18,000; a turkey house for 400 birds; and a general utility house with facilities for egg storage, incubation, and processing. In addition there is an eight room duplex apartment which houses the plant attendants. The Poultry Farm provides students with practical experience in egg and broiler production management, incubation and brooding.

The Dairy Farm occupies a tract of 170 acres. The Dairy Plant consists of a seventy stanchion milking barn with feed and milk rooms attached, calf barn, maternity barn, bull barn, lounging shed, manure

pit, two silos with a gross capacity of 230 tons and a seven room duplex apartment house that accommodates the plant attendants. The Dairy Herd consists of 90 registered jersey cattle and 6 registered holstein.

The Piggery is being established on a 30 acre tract of land. The land has been planted to improved pastures and fenced. Portable hog houses are used for shelter. A farrowing house is under construction.

The Beef Cattle unit was recently established with the purchase of 23 head of cattle. The present herd consists of 7 registered eighteen months old Aberdeen Angus heifers and a bull, 6 registered two-year old Hereford heifers and a bull, and the remainder consists of grade Herefords.

Fifty acres of improved pasture has been established for the beef herd. A 40x100 foot barn with hay storage space furnishes shelter for the beef cattle.

The general farm cultivates about 250 acres of land for hay silage and grain production and maintains the pastures for the dairy and beef cattle units. It is adequately equipped with tractors, hay balers, combines, seed drills, fertilizer distributors and accessory attachments needed for its operation.

D. S. COLTRANE HALL

The D. S. Coltrane Hall is a one-story brick structure with asphalt tile floor and fluorescent lights. It has a floor area of 11,533 square feet that is divided into 40 offices, one work room, one conference room, one reading room, one assembly room, and four storage closets.

This building furnishes office space for thirteen staff members and five clerical workers of the Agricultural Extension Division, the State Supervisor of Vocational Agriculture, the Executive Secretary of the New Farmers of America, Supervisor of Veteran Training Program, and State Tobacco Specialist of Production and Marketing Administration.

PUBLIC RELATIONS—ALUMNI AFFAIRS BUILDING

The Public Relations—Alumni Affairs Building is a modern five room Cape Cod Cottage which houses offices for these operations. In addition to a comfortable lounge provided for alumni and visitors, it contains two private offices, a photographic darkroom, a workroom and a photograph-engraving morgue. It is the first building on the left of the East Market Street entrance to the campus.

GENERAL INFORMATION

ADMISSION TO THE COLLEGE

High school graduates may qualify for admission to the Freshman class of the College undergraduate schools (School of Agriculture, School of Education and Science, and School of Engineering) by either of the following methods:

1. Presentation of a certificate from an accredited four-year high school indicating the successful completion of 16 units of acceptable courses distributed as indicated below.

or

2. Presentation of a certificate from a non-accredited four-year high school indicating the successful completion of 16 units of acceptable courses distributed as indicated below and the passing of an entrance examination administered by the College Entrance Board.

ENTRANCE UNITS

<i>Subject</i>	<i>Number of Units</i>
English	4
Algebra and Plane Geometry	2
Social Studies (Preferably U. S. History)	1
Science, including 1 unit in biology	2
Electives	7
Total	<u>16</u> Units

ELECTIVES

Agriculture	Home Economics	Physical and
Art	Industrial Arts	Health Education
Commercial Studies	Mechanical Drawing	Science Courses
Foreign Languages	Music	Social Studies
*Solid Geometry		Trigonometry

*At least $\frac{1}{2}$ unit in Solid Geometry is required of all students enrolling in agricultural engineering, architectural engineering, electrical engineering, engineering mathematics, and engineering physics.

Any seven (7) units may be presented from the above list of elective courses except that not more than four (4) units will be accepted in vocational courses such as agriculture and home economics nor more than two (2) units in such activity courses as music and physical education.

DEFICIENCIES

A student may be admitted with a deficiency of one (1) unit in natural science providing that he presents 16 other acceptable entrance units. This deficiency must be removed during the Fall, Winter, or Spring Quarter of the Freshman year by passing a non-collegiate credit course in General Science (General Science 011. The Physical Sciences or General Science 012. The Biological Sciences).

A student may also be admitted with a deficiency in Algebra or one in Geometry (but not deficiencies in both) providing that he presents 16 other acceptable entrance units. The deficiency in Algebra or the deficiency in Geometry must be removed during the Fall, Winter, or Spring Quarter of the Freshman year by passing a non-Collegiate credit course in Algebra or in Geometry.

PROCEDURES FOR APPLICANTS SEEKING ADMISSION TO THE COLLEGE

For admission to the Freshman class of an ensuing year, applicants should secure from the College Registrar an application blank which should be filed with that official anytime during the current school year, but in no case later than 30 days before the beginning of the quarter that he proposes enrolling. In addition, each applicant should present through the principal of his former school, a transcript of his entire record of subjects taken and grades received and a statement of the principal's estimate of his character. To facilitate the consideration of his application, the applicant should have his principal file these with the College Registrar as close to the time that the applicant files his application form as possible. In any case, the transcript of the applicant's record and the principal's character recommendation must be on file with the office of the Registrar at least 30 days before the beginning of the quarter that the applicant proposes enrolling.

Applicants should receive official notice from the Registrar that they have been approved for admission before presenting themselves for Freshman Orientation and registration. It is therefore unwise for an applicant to travel to the College before receiving an official notification of his acceptance from the Registrar.

ENTRANCE EXAMINATION FOR APPLICANTS FROM NON-ACCREDITED HIGH SCHOOLS

Applicants for admission to the College who are graduates on non-accredited high schools must, in addition to complying with the above procedures, pass an entrance examination administered, scored, and evaluated by the College Entrance Board. This examination is administered once each quarter prior to the registration period for the next quarter on dates in the College Calendar on page 3 of this bulletin. Approval of such applicants to report to the College for Freshman Orientation and registration is conditional and subject to cancellation upon failure of the applicants to pass the entrance examination.

PROCEDURES FOR APPLICANTS SEEKING READMISSION TO THE COLLEGE

A student whose attendance at the College has been interrupted for one or more quarters for reasons beyond his control, except that such interruptions shall not have been caused by dismissal from the College for disciplinary reasons, must apply for readmission directly to the Registrar. Such prospective re-entering applicants should normally receive notification of the approval of their application for readmission by the Registrar before presenting themselves for registration for the quarter of their re-entry.

A student whose attendance at the College has been interrupted for one or more quarters by reason of dismissal by the Disciplinary Committee of the College must also apply for readmission. In addition, such students must also satisfy the Disciplinary Committee of their acceptability. Again, such students should normally await notice of the approval of their application for readmission before presenting themselves to the College for registration.

RESERVATION

The college reserves the right to reject for cause any application for admission and to cancel the conditional approval of any applicant from a non-accredited high school who fails to pass the entrance examination.

FRESHMAN WEEK

1. Each candidate for the freshman class, who is not a resident of Greensboro, is expected to arrive on the campus the day preceding the date designated on the College Calendar for Freshman Orientation. All freshmen should be present by 8:00 a.m. on the first day.
2. The "permit to register" furnished beforehand by the Registrar, indicating the School or Department in which the applicant wishes to register must be ready for presentation to proper authorities.
3. The dates indicated in the College Calendar for Freshman Orientation and registration as well as those for upperclassmen must be strictly observed. Those seeking registration after the scheduled date, must pay late registration fee of \$5.00.
4. Admission to class will be permitted only after registration has been completed and certified on the official card of the Bursar.

CLASSIFICATION OF NEW STUDENTS**1. Freshmen.**

- a. Graduates from high schools will receive entrance ratings according to the standing of their respective schools.
- b. If the student is not a graduate of an accredited high school, he must comply with the requirements by examination. Entrance examinations will be held at the College on the day of registration.
- c. Every student, irrespective of the method by which he seeks admission, must present to the College through the principal of his former school, a transcript covering his entire record of subjects and grades and a statement including the principal's estimate of his character.

NOTE: All entering freshmen will be required to take placement tests in English and mathematics. All who fail in the English examination will be assigned to a remedial course in English (English 210). All who fail in the mathematics examination will be assigned to a remedial course in mathematics (Mathematics 309).

All who fail in the French test will take French 211.

2. Students of Advanced Standing.

After transcripts have been received, applications for advanced standing will be passed upon by the admission officer, and students will be furnished a statement of credit allowed.

All persons who desire to enter the College should make application to the Registrar before the opening of the quarter for which they wish to enroll. Those who desire to be admitted by certificate should apply as soon as possible after graduation from high school. Early attention to this matter will save the student delay at the opening of the session.

3. Special Students.

In exceptional cases applicants of mature years, of special training along particular lines, or of long experience in specific fields of knowledge, may be admitted to the college to pursue a non-degree program or study certain subjects as a special student, even though he cannot satisfy entrance requirements. Such a student must submit satisfactory evidence of his ability to profit from such a program and do a passing grade of work in each subject.

CLASSIFICATION OF ADVANCED STUDENTS**Sophomore—**

To be classified as a sophomore a student must have completed fifty hours of work open to freshmen with at least fifty grade points. As a part or in addition to this, the freshman courses in education, vocations, military science or physical education, and remedial English and mathematics must be completed. In addition all admission deficiencies must have been removed.

Junior—

Before being classified as a junior a student must have completed one hundred quarter hours of work required of sophomores with a similar number of grade points. No student will receive junior classification until all required freshman and sophomore courses have been completed.

Senior—

Before gaining senior classification a student must have completed at least one hundred and fifty hours of required and major work with a minimum of one hundred and fifty grade points.

STUDENT LOAD

The unit of credit is the quarter hour. It stands for one recitation or two laboratory periods per week for a period of twelve weeks. Each recitation period requires approximately two hours of preparation.

Regular students will be required to register for a minimum of 14 hours of college credit per quarter.

(a) A student whose general average is "C" may register for not more than the normal load of his curriculum.

(b) Students whose average is 2.5 grade points, with no grade below "B" may be permitted to register for not more than 21 hours of work for the quarter following such a record.

Students carrying a normal load in regular classes will not be permitted to register for credit in evening or extension classes.

MARKING SYSTEM

	<i>Grade Points</i>
93-100—A (Excellent)	3
82- 92—B (Good)	2
71- 81—C (Fair)	1
60- 70—D (Poor, but passing)	0
Below 60—F (Failure)	—1
I (Incomplete)	
W (Withdrew)	

GRADE POINTS

The maximum points which a candidate for graduation with minimum hour requirements can make under this system will be 600, the minimum 200; this means that, in order to graduate a student must make an average of "C."

REMOVAL OF FAILURES

At his first opportunity a student must repeat in class a required course in which he has failed, unless the Dean of his School authorizes a suitable substitute course.

INCOMPLETES

Students are expected to complete all requirements of their courses during the quarter in which they are registered. However, if at the end of the quarter, a small portion of the work remains unfinished that can be completed without further class attendance, the grade for the student may be reported "Incomplete," providing his standing in the course is of passing quality.

To secure credit the work must be completed within one month after the beginning of the succeeding quarter in residence, otherwise, the grade automatically becomes "F."

At the close of the quarter, each teacher shall file with the Registrar a list of names of students who have received "Incomplete" grades together with a statement of all the work required to complete the course before a final grade can be reported to the Registrar.

After registration has been completed in the following quarter and it has been determined that a student has registered, both he and the teacher shall be notified by the Registrar of the outstanding "Incomplete" grade and that it must be removed within the prescribed period.

COURSE NUMBERING SYSTEM

The instruction of the College is administered by five main groups:

- The Faculty of the Graduate School
- The Faculty of the School of Agriculture
- The Faculty of the School of Education and Science
- The Faculty of the School of Engineering
- The Faculty of the Technical Institute

The number of each course in the Agricultural School begins with the figure 1; those in the School of Education and Science with the figure 2; those in the school of Engineering with the figure 3, and those in the Vocational School, with 4.

Each course is designated by a number containing three figures. The first indicates the school in which it is offered; the second (with a few exceptions), its academic classification; and the third, either the quarter in which it is usually given or its serial number.

Examples:

History 211 is a course offered by the Faculty of the School of Education and Science; it is open to freshmen, and is usually offered in the first quarter (Fall Quarter).

Chemistry 111 is a course offered by the Faculty of the School of Agriculture; it is open to freshmen, and it is the first of a series.

Physics 323 is a course offered by the Faculty of the School of Engineering; it is open to Sophomores, and it is usually given in the third quarter (Spring Quarter).

Exceptions:

- (a) There are some unavoidable exceptions to this system, especially with reference to the second and third figures. Some courses with the middle figure 1 are open to upperclassmen, and there are a few courses with the middle figure 2 open to freshmen. Courses are not in every case given during the quarter indicated by the third figure (where the third figure is meant to indicate the quarter rather than the serial number).
- (b) Courses in all schools open to advanced undergraduates and graduates are numbered 500 plus; strictly graduate courses are numbered 600 plus.
- (c) Courses in the Technical Institute are numbered 400 plus.

SCHEDULE REGULATIONS

EXAMINATIONS

Entrance examinations and examinations for removal of conditions will be held on the day of registration. All students who have to remove conditions should avail themselves of this opportunity.

CHANGES IN SCHEDULE

Students have one week from the beginning of each quarter in which to make adjustments in their schedule. After this time no changes will be permitted except by written permission of the dean of the particular school. The registrar will then recall the class card and discharge the student from the class.

No student will be allowed credit for courses added to his schedule without permission after it has been approved, and any student illegally dropping a course for which he has been registered will be assigned the grade "F" at the end of the quarter.

CLASS ATTENDANCE

Students will be required to attend scheduled assemblies, vespers and the regular exercises of the courses in which they are registered.

No student is entitled to any cuts whatever; a cut is defined as an unexcused absence from any class. Cuts will be considered on a course basis inasmuch as a student may cut repeatedly from a certain course while he attends regularly all his other classes.

As soon as a student is reported as having three cuts from any class that student will be placed on probation by the Dean of Men and the student's parents will be notified accordingly. The student and parents will be notified that if the student takes two more cuts from the course in which he already has three cuts he will be officially dropped from that course. Should a student cut excessively in all his courses the result will be dismissal from the institution for the remainder of the quarter.

SCHOLARSHIP

Students will be expected to do a passing grade of work at all times. Students failing to attain a "C" average in any quarter will be placed on probation the following quarter. Unless definite improvement is made while on probation, the student may be asked to withdraw.

HONOR ROLL

To encourage scholarship and integrity, the College publishes an Honor Roll at the end of each quarter. Regular students whose average grade in all courses is "B" shall be eligible for the Honor Roll. Those students whose grade point average is 2.5 each quarter for three consecutive quarters shall be eligible for a Scholarship.

WITHDRAWAL FROM COLLEGE

Students who for any reason find it necessary to withdraw from College before the scheduled termination of the school year should file an official withdrawal with the bursar. Forms for this purpose may be secured in the office of the registrar. Students should have these forms signed by the designated officials and filed before leaving the campus.

All accruing accounts and obligations against such students will terminate on date of filing withdraw notice. Accruing accounts will continue against those failing to file notice of withdrawal.

EXTRACURRICULAR ACTIVITIES

Each student shall be encouraged to participate in some (one) extracurricular activity, upon which he shall be graded with regards to excellence.

QUARTERLY EXAMINATIONS

A final examination will be required as a part of every course. An examination schedule showing time and place of meeting of each course and section will be published quarterly. Schedules so published will be followed without variation in any respect, except by special permission of the dean of the school in which the course is offered.

DEPORTMENT

Students will be expected to conduct themselves properly at all times and any student who manifests unwillingness to conform to the rules and regulations that are prescribed, or that may be prescribed to govern the student body, or any student whose influence or deportment seems detrimental to the best interest of the school will be asked to withdraw from the institution.

A student automatically forfeits his privilege of working for pay at the College when, for any reason, he is placed on probation because of misconduct.

TEACHERS' DAILY REPORTS

Teachers are required to file in the office of the dean of their school a report of their classes and other official activities daily. This report should show among other things the number of classes scheduled, the classes taught, the number of students present and absent and a list of those absent. This report must be filed at the end of each teaching day.

TEACHERS' QUARTERLY REPORTS

Each teacher will be required to file duplicate copies of his final report of grades for each class. These reports showing the name of each student registered in the class and the mark assigned for the quarter together with copies of the final examination questions will be filed, the original in the registrar's office and the duplicate in the office of the dean of the appropriate school, on or before the scheduled date for such reports. Teachers are cautioned to see that the name of every student assigned to their classes appears on the class roster with a mark correctly assigned. After marks have been filed in the registrar's office, teachers cannot change them except by petition to the Administrative Council.

RELIGIOUS ACTIVITIES

One of the purposes of the college is to maintain a high moral tone and to develop a broad, tolerant religious spirit among its students. The College Chapel has been organized on a non-denominational basis with the Director of Religious Activities serving the function of director. The Chapel provides within the college environment an opportunity for students and faculty to continue the development and enrichment of their spiritual life through participation in a program of religious activities similar to those of their home churches. In addition to two public worship services per month, the religious program is implemented through the activities of the Sunday School, the Official Boards of the Chapel, the Usher Board, The Fellowship Council, Young Men's Christian Association, and Young Women's Christian Association. The College encourages students to maintain ties with their religious heritages by attending local churches of their denominations. For their convenience a roster of churches in the college community is printed in the Student Handbook.

HEALTH SERVICE

It is the purpose of the health service program to improve and protect personal and environmental health conditions and thereby develop a safe and healthy college community. Through a competent staff of doctors, dentists, and nurses, student health problems are given professional attention.

Upon entering the institution, and each fall thereafter, a thorough health examination, including a blood test, is given to each student. Follow-up and referral services are rendered for all defects found.

The college infirmary is housed in a new thirty-eight bed building with modern facilities, including a complete dental unit, clinical laboratory, X-ray and physical therapy equipment. Each student pays a small medical fee, which in great part, covers medicine, the care of minor illnesses and injuries. These services are available on a twenty-four hour daily basis.

Serious cases requiring hospitalization are referred to city hospitals. These services are not covered by the student medical fee.

INFIRMARY REGULATIONS ON BLOOD TEST

WE ARE NO LONGER ABLE TO DO BLOOD TESTS ON THE CAMPUS, THEREFORE, WE ARE REQUESTING THAT YOU BRING YOUR BLOOD TEST WITH YOU. IT MUST BE THE ORIGINAL FORM FROM THE CITY OR STATE HEALTH DEPARTMENT, DATED AFTER AUGUST 1ST OF CURRENT YEAR.

NO STUDENT WILL BE ALLOWED TO REGISTER WITHOUT IT.

DORMITORY REGULATIONS

BOARDING STUDENTS

All students who room on the campus must take meals in the college cafeteria.

NON-RESIDENT STUDENTS

Students whose legal residence is not in Greensboro will not be permitted to board and lodge off the campus unless they have special permission, or unless they have employment that requires them to live on the premises.

FRATERNITY HOUSES

The College will not permit fraternities, sororities or other groups to establish "houses" off the campus.

DISCIPLINARY SUSPENSION

All students, except *bona-fide* residents of Greensboro, are required to leave the campus and the city within forty-eight hours after disciplinary suspension. Permission to re-enter the College will not be granted if this regulation is violated.

DORMITORY PROVISIONS

The College provides for each student a bed, bureau, study table and straight chair. Students are required to furnish their own curtains, blankets, bed linen, rugs and towels. Electrical appliances, other than those already supplied, are forbidden. Exception: Radios.

CREDIT EVALUATION SYSTEM

The credit value of each course is indicated by three numbers. The first represents the full credit value in quarter hours, the second, the number of recitations per week, and the third, the number of hours spent in the laboratory each week. For example: French 211, Credit 5(5-0) means that this course carries 5 hours credit, and is conducted by lecture or recitation 5 times per week with no assigned laboratory; while Chemistry 112, Credit 5(3-4) carries 5 hours credit; 3 hours being devoted to lecture or recitation and 4 spent in the laboratory. Two hours in the laboratory are required for 1 hour of credit.

GENERAL GRADUATION REGULATIONS

(For special graduation requirements for each School—
see pages 65, 72.)

Graduation from the A. and T. College involves the satisfaction of the following requirements:

1. The candidate for a degree must have selected a specific curriculum having the approval of the Dean of the School in which he is registered. This curriculum must be completed.
2. Whether registered in Agriculture, Education and Sciences or Engineering, he must complete at least 200 quarter hours and 200 grade points.
3. The credit hours must aggregate at least 200, including the required courses in military science and physical education. The grade points must equal 1 times the number of credit hours undertaken whether passed or failed. After securing 200 credit hours if the student is deficient in grade points, he must take additional courses to secure these points. The student must obtain an average of 1.5 or more in his major field and 1.0 or more in his minor field. A minimum of one year of residence is required.
4. It is the aim of the institution to send forth men and women who are fit representatives. To this end, the College reserves the right to refuse to admit any student to the Senior Class or to graduate anyone who though qualified by class record may otherwise seem unfit.
5. Payment of diploma fee of five dollars (\$5.00) must be made to the bursar on or before February 1 preceding graduation.
6. Students in the graduating class must clear all conditions by the end of the quarter preceding graduation.
7. Candidates for graduation must file in office of the Registrar an application for graduation upon the form provided, at least four months prior to the date they expect to graduate.

GRADUATION WITH HONORS

By a vote of the Administrative Council in the Spring of 1938, it was decided that henceforth graduation honors would be awarded candidates completing all requirements for graduation in accordance with the following stipulations: (1) Those who maintain throughout their course a grade point average within the range of 2.00 to 2.24 will receive "honor"; (2) those who maintain a general average within the range from 2.25 to 2.49 will receive "high honor"; and (3) those who maintain an average within the range from 2.50 to 3.00 will receive "highest honor." Publication of honors and scholarships is made at graduation and in the college catalog.

DEGREES

All students successfully completing any of the four-year courses of study shall be entitled to the degree of Bachelor of Science.

1. Those graduating from a four-year curriculum offered in the School of Engineering shall be entitled to the Bachelor of Science degree in Architectural Engineering, Electrical Engineering, Mechanical Engineering, Engineering Mathematics, Engineering Physics, Business, Fine Arts, and Industrial Education.

2. Those graduating from a four-year curriculum in the School of Agriculture shall be entitled to the degree of Bachelor of Science in Agriculture.

3. Students successfully completing a curriculum in the School of Education and Science shall be entitled to the degree of Bachelor of Science.

4. The Master of Science degree will be awarded those meeting requirements for same. See page 77.

STUDENT ORGANIZATIONS

ALPHA KAPPA MU HONOR SOCIETY

The Alpha Kappa Mu Honor Society is a national scholarship organization with local chapters established in grade "A" colleges.

The local chapter is now known as the Gamma Tau Chapter of the Alpha Kappa Mu Honor Society, and qualifications for Gamma Tau which have been changed to conform to those of the National Organization are as follows:

1. Candidates must have completed ninety quarter hours or sixty semester hours with an average of not less than 2.3. These must include all required courses listed for freshmen and sophomores.

2. Membership is open to all students of the College provided they meet scholastic requirements; in the case of transfer students, there must have been a chapter of Alpha Kappa Mu or some other honor society with equivalent standards, rules and regulations at the institution from which they transferred.

3. Candidates must never have been suspended for disciplinary problems.

The Society encourages participation in at least one extracurricular activity. All students recommended by the registrar and personnel deans as having the qualifications listed above are eligible for membership.

SOPHIST SOCIETY

This organization is composed of regular college students of Freshman, Sophomore, and Junior classification who maintain a minimum average of 2.3. The purpose of this organization is to encourage high scholarship among all college students.

Persons who remain in the Sophist Society for three years are eligible for membership in Alpha Kappa Mu Honor Society during the senior year.

SIGMA RHO SIGMA RECOGNITION SOCIETY

Sigma Rho Sigma Recognition Society is a national honor society for social science majors; its membership is open to graduates and undergraduates. Chapters of the society are located in the various colleges represented in the membership of the Association of Social Science Teachers in Negro colleges.

The purposes of the society are:

1. To encourage study, promote research and to recognize achievement in the field of social science.
2. To promote the cooperation of students in the field of human relations.
3. To promote professional growth and development among the members.

To be eligible one must:

1. Be a junior concentrating in the social sciences, with an average of two points or above and have a minimum credit of 25 hours in major courses in the social sciences.

BETA KAPPA CHI

Beta Kappa Chi is a recognition society for honor students in fields of science and engineering.

FRATERNITIES

The following national fraternities have chapters at the college: Alpha Phi Alpha, Omega Psi Phi, Phi Beta Sigma, Kappa Alpha Psi and Alpha Phi Omega.

SORORITIES

The following national sororities have established local chapters: Alpha Kappa Alpha, Delta Sigma Theta, Zeta Phi Beta, Iota Phi Lambda and Sigma Gamma Rho.

PAN-HELLENIC SOCIETY

The Pan-Hellenic Society is a federation of all fraternities and sororities on the campus. Its membership is composed of elected representatives from each Greek-letter organization. The main purpose is joint action for maintaining high standards in fraternity and sorority life at the institution.

COLLEGIATE 4-H CLUB

The Collegiate 4-H Club is composed of students who have had previous experience as 4-H Club members in high school. An informal meeting of a business and social nature is held monthly. Honorary members may be elected to the club from time to time.

THE COLLEGIATE NFA CLUB

The Collegiate Chapter of the New Farmers of America is composed of agricultural students who are former NFA members or trainees enrolled in the teacher training department of the School of Agriculture. The purpose of the collegiate chapter is to give training and experience to students who will later become teachers of vocational agriculture. Honorary members may be elected to the collegiate chapter of the New Farmers of America.

THE AGRICULTURAL ASSOCIATION

This association is composed of agricultural students. It meets twice monthly for business and social purposes.

Honorary members may be elected to the association from time to time.

THE COLLEGE BANDS

The several college bands occupy an important place in the life of the institution. The Band Department is complete with full instrumentation and equipment for the many varied activities of marching and concert organizations. Expert instruction in all band instruments is given by a staff of trained bandmasters.

The organizations in the Band Department are:

Beginners Band—for any College student who desires to learn to play a musical instrument.

Intermediate Band—for students who have had not more than three years of previous experience on a band instrument.

Senior Bands—The 100-piece marching group for the many athletic events that take place in the fall. Open to those students who have four or more years of experience on a band instrument. Also the 80-piece symphony concert group open only to those qualified students who successfully audition for entrance.

Women's Band—The "All-Girls" band that supplements the regular College Marching Band in the fall at all athletic events. During the remainder of the year this group appears at student recitals in minor concert appearances.

Military Band—A separate organization that furnishes music for all military reviews, drills, and parades. Open only to members of the Infantry and Air-Force Reserve Officers Training Corps.

A splendid opportunity is thus offered to competent and worthy students to learn band music without extra expense to themselves.

FOREIGN LANGUAGE CLUBS

Le Cercle Francais and *El Circulo Espanol* meet once a month during the academic year.

THE FORTNIGHTLY CLUB

This organization, which gets its name from the period normally intervening between each meeting, is composed mainly of English majors and other advanced students who are interested in coming together for the purpose of exchanging ideas about books and people that have influenced or are influencing the life of their time.

THE DEBATING SOCIETY

The Kappa Phi Kappa Forensic Society, better known as the Debating Society, is designed to stimulate interest in public speaking and debate. It is composed of college students who have distinguished themselves in public performances in these fields.

The Society awards a certificate of merit to any graduating senior who has participated in non-varsity debates or who has otherwise rendered meritorious service to the Kappa Phi Kappa Forensic Society for at least two years.

THE A. AND T. LITTLE THEATRE

The Richard B. Harrison Players is an outstanding campus organization whose genuinely artistic work bespeaks the excellent training and unusual opportunities rendered by the dramatic workshop and laboratory theatre for experimentation in acting, playwriting, stage-craft, and play direction.

CHORAL ORGANIZATIONS

The College Choir, the Men's Glee Club and the Concert Choir have won for themselves an enviable reputation for the genuine artistry of their work. These organizations, open to all qualified students, offer extracurricular activity which is at once instructive and enjoyable.

LOANS, SCHOLARSHIPS AND PRIZES

COLLEGE SCHOLARSHIPS

The College will grant a scholarship for one year to any student who makes a grade average of 2.5 for three quarters of the preceding school year. This scholarship will pay tuition and can be used for no other purpose.

SCHOLARSHIPS IN DAIRY HUSBANDRY

Six scholarships are given each year to high school graduates who wish to take a one-year short course in dairy husbandry. Board, room and all fees are paid. Applications should be obtained from the Dean of Agriculture before August 1 of each year.

NFA SCHOLARSHIPS

The College offers a one-year scholarship of \$50.00 to the NFA member graduate from high school who has the best record in supervised practice work and scholastic activities for a period of four years.

Y.W.C.A. SCHOLARSHIP

As a means of promoting scholarship among high school girls and to encourage them to attend college, the College Y.W.C.A. offers, each year, a scholarship of \$50.00 to be used in defraying college expenses.

SUSIE B. DUDLEY SCHOLARSHIP

This scholarship of \$100.00 in cash is made possible by Mrs. Leora J. Spaulding, class of 1935, of Greensboro, North Carolina, and is given in honor of the late Mrs. Susie B. Dudley, wife of former President James B. Dudley. It is open to women students who are doing or who plan to do graduate study at the college in some phase of English or education relating to dramatics, public speaking or writing, activities in which Mrs. Dudley was personally interested.

4-H CLUB SCHOLARSHIP

In order to promote interest among Negro 4-H Club boys in North Carolina and to encourage continuous achievements in all phases of 4-H Club work, the College offers a one-year scholarship of \$50 to the high school graduating senior with the best record in 4-H Club work. This is to be used in defraying expenses at the institution.

WILLIAM H. FOUSHÉE MEMORIAL SCHOLARSHIP CUP

Dr. J. M. McGee of Greensboro, each year presents a scholarship cup in memory of William H. Foushee, Jr., a former student of A. and T. College, to the member of the Junior Class with the highest scholastic average.

THE CHARLES L. COOPER AWARD

Mu Psi Chapter of the Omega Psi Phi Fraternity presents annually this award in memory of Dr. Charles L. Cooper, a former professor of Industrial Education at A. and T. College. It is presented to the student in Industrial Arts with the highest average above two points.

THE REGISTER AWARD

As a means of promoting a wider interest and greater activity on the part of the students in the field of journalism, the College *Register* awards a gold key to those members of the graduating class who complete a period of at least two years of meritorious service as members of the *Register* staff.

ALUMNI ATHLETIC AWARD

The Philadelphia branch of the College Alumni Association awards a gold medal each year to the student of the graduating class making the best record in major intercollegiate sports.

ALUMNI SERVICE AWARD

The Gate City (Greensboro) Chapter of the Alumni Association makes an award each year to that member of the graduating class, voted by the Administrative Council as having rendered the "most distinctive service to the College and to the community."

THE KAPPA PHI KAPPA KEY

The Kappa Phi Kappa Key was first awarded in 1928 by the Kappa Phi Kappa Debating Society.

The key is awarded to the member, or members of the graduating class who have been speakers on the college varsity team for two years.

DEBATING TROPHIES

The Rand-Hawkins-McRae debating trophy is provided by Messrs. J. M. Rand, J. A. Hawkins and S. D. McRae, graduates of the College, Class of 1906, and is awarded annually to the members of the graduating class who have at least three years of varsity debating.

Freshman-Sophomore Debating Trophy—The college presents to the winning team at the annual Freshman-Sophomore Debate a debating trophy with the name of the class and the year of the debate. This trophy signifies the increasing interest in oratory and research and serves as an incentive for freshman and sophomore achievement in the forensic arts.

MEDALS

The John Merrick Medal will be awarded to the student completing the four-year mechanical course with the best record in the college department.

The William Andrew Rhodes medal will be awarded to the male or female student having good character and making the best record in musical activities during the school year. This award is sponsored by Dr. William Andrew Rhodes, composer, teacher, and conductor.

The M. F. Spaulding Medal will be awarded to the student completing the full four-year course in agriculture with the best record.

The Saslow's, Inc., Medal will be awarded (a) to the member of the graduating class who completes the four-year course in the School of Education and Science with best record, and (b) to the student who graduates with best record in Social Sciences.

STUDENT LOAN FUND

The A. and T. College Student Aid Fund was established by the Student Council of 1946-47 to provide a source of revenue for loans and grants to deserving students. The revenue is derived from student contributions of \$0.50 per year, faculty members, campus organizations, Alumni donations and other legitimate sources.

Any regular term student duly registered is eligible to apply for aid through this fund.

SUMMER SCHOOL

In Point of Continuous Service, the Oldest Summer School in the Country for Negroes

The fifty-second annual summer session of the A. and T. College Summer School will begin June 7, 1954, and continue for eleven weeks, thereby completing a full quarter of college work under the new accelerated plan.

Aside from the splendid opportunity which the Summer School offers teachers-in-service to raise their certificates and thereby obtain better salaries, the College makes it possible for the ambitious teacher to obtain a standard degree by attending the summer school.

College students may shorten their stay in college by attending summer school. Students from other institutions may enter the summer sessions for credit in their respective institutions, by permission from either the president or dean of their respective colleges. Such students will not be required to present a complete record of their previous training, but will be required to present a signed statement from the president or dean indicating the summer courses for which credit will be allowed.

College graduates may use their time in summer school meeting requirements for the Master of Science degree. Persons interested in earning this degree should make application for candidacy early in order that their program may be arranged with this end in view.

EVENING SCHOOL

The College conducts an evening school for in-service-teachers and others who can qualify for the courses offered. All evening courses are conducted on the same basis as courses that are offered in the regular day classes, and may be applied towards a degree. Admission requirement for the Evening School is the same as for the regular day classes.

EVENING TRADE CLASSES

The Technical Institute will conduct evening classes in trades and related subjects in any area that ten or more persons request.

The evening classes are intended primarily for those persons who work during the day and desire supplemental training in their chosen fields. In this way it is possible for one to obtain an excellent theoretical training and a practical background at the same time, which, if he has the incentive and ability, should lead to advancement. These courses will vary from elementary to advanced work along technical lines.

These classes will be scheduled for two-hour sessions between the hours of 6:30 and 9:30 in the evening to meet the convenience of the students.

EXPENSES AND FEES

Expenses and fees at A. and T. College are so arranged that the largest installments are payable at the beginning of the school year and at the beginning of each quarter. The fees listed below apply to the five classes of students. They are:

1. Boarding and Lodging—men.
2. Boarding and Lodging—women.

These groups consist of men and women students who live, have their meals, laundry, and classes on the college campus.

3. Boarding only students are those who take their meals and classes, only, on the campus.
4. Day students are those who take their meals, lodging, and laundry off the campus.
5. Part-time off campus students are those who take less than the minimum number of courses to be classed as a regular student. (Less than 12 quarter hours per quarter.)

DISTRIBUTION OF FEES

<i>Name of the Fee</i>	<i>Part Time</i>	<i>Boarding Only</i>	<i>Day</i>	<i>Boarding and Lodging Men Women</i>	
				<i>Men</i>	<i>Women</i>
<i>Paid Monthly (8½ months)</i>					
Board (allowance for holidays)	\$22.00		\$183.00	\$183.00	\$183.00
Lodging	10.00			85.00	85.00
Laundry—Men	2.00			17.00	
Laundry—Women	1.00				8.50
Custodial Care	5.50			\$49.50	
Tuition (Day Students Only)	14.50			130.50	
<i>Paid Quarterly (Three Quarters)</i>					
Tuition	43.50	\$45.00*	130.50	130.50	130.50
Course Fee	6.00	18.00	18.00	18.00	18.00
Athletics	4.00		12.00	12.00	12.00
Medical (\$6.00 payable first registration during year and \$3.00 at other quarters) .	3.00		12.00	12.00	12.00

*Cost of one 3 Quarter hour course for the year.

<i>Name of Fee</i>	<i>Part Time</i>	<i>Boarding Only</i>	<i>Day</i>	<i>Boarding and Lodging</i>	
				<i>Men</i>	<i>Women</i>
Registration	2.00		6.00	6.00	6.00
Lecture	1.00		3.00	3.00	3.00
Library	1.00	3.00	3.00	3.00	3.00
†Picture Fee .....	.50		.50	.50	.50
†Test Fee	1.50		1.50	1.50	1.50
	—	—	—	—	—
Total General Fund Fees				\$66.00	\$369.50
				\$236.00	\$471.50
					\$463.00
<i>Special Fund</i>					
(All Payable Sept. 15)					
College Register and Annual	5.00		5.00	5.00	5.00
Dormitory Key Deposit	1.00			1.00	1.00
Library and Laboratory Deposit	2.00	2.00	2.00	2.00	2.00
Student Activities	2.00		2.00	2.00	2.00
Mailbox Rental	1.00			1.00	1.00
Student Aid .....	.50		.50	.50	.50
	—	—	—	—	—
Total Special Fund Fees				2.00	9.50
					9.50
					11.50
					11.50
Total payable during year (Does not include other Fees listed elsewhere					
	—	—	—	—	—
when applicable).				\$68.00	\$379.00
In addition to the fees listed above the Out-of-State student will have to pay the following				\$245.50	\$483.00
					\$474.50
	—	—	—	—	—
\$48.00	\$229.50	\$229.50	\$229.50	\$229.50	\$229.50
	—	—	—	—	—
Totals for Out-of-State students ...				\$116.00	\$608.50
					\$575.00
					\$712.50
					\$704.00

†Both of these fees payable only at first registration during the year.

SCHEDULE OF FEE PAYMENTS

1954-1955

Pay- ment No.	Date of Payment	Part Time	Boarding Only	Day	Boarding and Lodging	
					Men	Women
1	September 15, 1954 .	\$ 24.00*	\$97.00	\$51.50	\$110.50	\$109.50
2	October 15		22.00	20.00	34.00	33.00
3	November 15		27.50	20.00	45.00	43.75
4	January 3, 1955	22.00	82.50	47.00	94.50	93.50
5	February 1		22.00	20.00	34.00	33.00
6	March 1		16.50	10.00	25.00	24.25
7	March 21	22.00	82.50	47.00	94.50	93.50
8	April 21		29.00	30.00	45.50	44.00
Totals for Year ..		\$ 68.00	\$379.00	\$245.50	\$483.50	\$475.00

In additions to the fees listed above the Out-of-State student will have to pay \$ 48.00 \$229.50 \$229.50 \$229.50 \$229.50

Totals for Out-of-State Students \$116.00 \$608.50 \$575.00 (\$712.50) \$704.00

GRADUATE FEES

1. All persons taking 14 quarter hours or more will be charged the customary fees and charges of an undergraduate student.
2. Persons taking 12 hours or less may elect to pay \$5.00 per quarter hour tuition plus the following additional fees:
 - (a) Library fee \$3.00
 - (b) Course fee 6.00
 - (c) Library and Laboratory deposit 2.00
3. A fee of \$5.00 for those registering for the first time.

*Cost of one 3 quarter hour course.

OTHER FEES

\$229.50—Annual out-of-state tuition fee to be paid in quarterly installments of \$76.50 by all non-residents of North Carolina. For part-time students this fee is payable at the rate of \$5.34 per quarter hour for 9 quarter hours or less.

- 4.00 Quarterly fee for those who take the course in swimming.
- 10.00 R. O. T. C. Deposit must be made by all male students taking this course.
- 3.00 Rental of cap and gown (for seniors only).
- 3.00 Certificate fee.
- 5.00 Diploma fee.
- 1.00 Transcript fee (after the first one).
- 4.00 Music (Two lessons per week and the use of piano per month).
- 1.00 Fine per day for late registration.
- 25.00 Practice teaching (other than Vocational Agriculture).
- 50.00 Senior Engineering inspection tour.

Note: All fees and bills are payable in advance. Make all post office money orders, bank drafts and cashier's checks payable to A. and T. College. Personal checks are not accepted unless certified.

LODGING DEPOSITS

Students should reserve rooms far in advance of the time of arrival by paying the room deposit of five dollars, which will later be credited to their account upon presentation of receipt. If for any reason a student fails to register, the lodging deposit will be refunded, provided application for same is made within ninety days after the appointed day of registration. If application is not made within that time the deposit will be forfeited. Send room deposits to the Registrar.

REFUNDING SCHEDULE

Board	Unused meal tickets at the rate of \$.75 per day.
Laundry	Value of unused tickets in laundry book.
Tuition	If paid monthly, no refund. If paid quarterly, to be refunded at the rate of \$14.50 per month for those months no part of which has been used.
Course Fee	Refundable at the rate of \$2.00 per month for those months during which the student did not attend the course.
Medical Athletic Registration	Not refundable unless student officially withdraws within 10 days after registration, then two-thirds of the total fee is refunded to him. No refund after the first five weeks of the quarter.

Lecture
Library
Out-of-State
Lodging
Custodial Care

Special Fund Fees

College Register	No refund unless student withdraws officially
Student Activity	within 10 days after registration, then two-thirds of total to be refunded
Student Aid	
Mail Box Rent	

Deposits

Key Deposit	To be refunded in full, minus lost or damaged
Library and Laboratory	property.
Test Fee	No refund.
Picture Fee	No refund.

ENTRANCE FEES

Each student must pay in cash all entrance fees and expenses for the first month, when he registers. See pages 54-56 for complete list of fees and expenses.

MONTHLY AND QUARTERLY FEES

Any student whose bills are not paid on or before the day following the date on which such bills are due will be excluded from all college privileges until such bills are paid.

LATE FEES

Each registrant will be required to pay five dollars late registration fee after the last day assigned for registration.

MEDICAL EXAMINATION FEES

All regularly enrolled students of the College will be required to take a physical examination upon entrance. The College Physician, or some other physician designated by him, will be in charge of all examinations. Day students will be assessed a small fee to cover this and other emergency services.

AIR AND MILITARY SCIENCE DEPOSIT

All students taking military training are required to make a deposit of ten dollars for uniforms. This deposit will be refunded when the uniform is returned in good condition. (All freshmen and sophomores unless excused by the College Physician are required to take military training.)

SPECIAL NOTICE

Due to the rising cost of living the Administration reserves the right to raise fees and charges without advance notice should conditions warrant.

F. D. BLUFORD, *President.*

OUT-OF-STATE STUDENTS

Non-resident students must pay an out-of-state charge. A non-resident student is one who comes into North Carolina from another state or foreign country for the purpose of attending college.

For this purpose any student whose parents have not lived in this state for more than six months immediately prior to his or her first enrollment in this college will be considered as non-residents, except in the case of:

1. Students twenty-one years of age at the time of their first enrollment, and responsible for their bills, who have resided in North Carolina for more than one year preceding the day of their first registration.
2. Students whose parents are in the United States military or government service and stationed out of state. In both of these cases such students will be regarded as residents.

Students cannot claim a change in resident status after they have enrolled. Those misrepresenting themselves in this respect in order to avoid paying out-of-state fee will be subject to disciplinary action by the college.

SELF-HELP

The institution cannot guarantee jobs to students who expect to work their way through college. Many students find work in private families and in other occupations, by means of which they defray a portion of their expenses. A person of ability and energy who can do work of any kind can generally find employment, but prospective students are cautioned against depending upon such unreliable sources of income.

SPECIAL NOTICE TO KOREAN VETERANS*(Payment of Fees)**

Public Law 550, 82nd Congress, differs from the law which provided educational benefits to veterans of World War II. One difference is the fact that under the new law, the Veterans Administration pays no money to the school for veterans' training. All money is paid directly to the veteran in the form of monthly subsistence allowance as follows:

Veteran with no dependents	\$110
Veteran with one dependent	135
Veteran with two or more dependents	160

*This does not apply to disabled Korean Veterans.

The veteran, therefore, is responsible for meeting all of his expenses. Usually two or three months elapse before the veteran receives his first check, so the veteran should be prepared to meet his expenses for the first three months. It is advisable to have, in addition to the money for regular college fees, (see pages 54-56), enough money to purchase books, supplies, and incidentals. An estimate of the cost of books is shown below:

	<i>Fall Quarter</i>	<i>Winter Quarter</i>	<i>Spring Quarter</i>
Engineering Students	\$65.00	\$35.00	\$35.00
Trade Students	25.00	25.00	20.00
Students in other fields ..	35.00	25.00	25.00

Another provision of Public Law 550 is the fact that *only one* change in program is allowed. Therefore, the veteran should obtain vocational and educational counseling through the Veterans Administration or through the college before enrolling in college. The veteran may obtain counseling through the Veterans Administration by simply checking item No. 14 "yes" on the Application for Program of Education and Training form. Guidance may be obtained at the college by visiting the College Guidance Center.

INSTITUTIONAL ORGANIZATION

SCHOOL OF AGRICULTURE

WILLIAM E. REED, *Dean*

The School of Agriculture is organized into the following departments: (1) Agricultural Education—agricultural education, agricultural and home economics extension; (2) Agricultural Economics—agricultural economics, and rural sociology; (3) Animal Industry—animal husbandry, dairy husbandry, and poultry husbandry; (4) Biology—bacteriology, botany, general science, and zoology; (5) Chemistry—biochemistry, and chemistry; (6) Home Economics—child development, clothing, foods and nutrition, home administration, home economics education, institutional management, and nursery school education; (7) Plant Industry—agricultural engineering; field crops, forestry, fruits and vegetable production, geology, ornamental horticulture, and soils; (8) Associated Departments, consisting of state subject-matter, supervisory and administrative personnel of Agricultural and Home Economics Extension Service; and (9) Vocational Agriculture.

The School of Agriculture offers students four-year programs of study leading to the degree of Bachelor of Science. These courses of study are designed to give not only scientific, technical, and practical training in the several specialized fields, but also provide for the development of a broad educational and cultural background which fits the student for more varied fields of endeavor.

In agriculture the degree of Bachelor of Science is offered in the following:

1. Agricultural Biochemistry.
2. Agricultural Education.
3. Agricultural Engineering.
4. Agricultural Marketing.
5. Agronomy.
6. Animal Husbandry.
7. Dairy Husbandry.
8. Farm Management.
9. General Agricultural Economics.
10. Horticulture.
11. Poultry Husbandry.
12. Ornamental Horticulture.

In home economics the degree of Bachelor of Science is offered in the following:

1. Clothing.
2. Foods and Nutrition.
3. Home Economics Education.
4. Institutional Management.
5. Nursery School Education.

For those students who do not plan to remain in college for a four-year period, two-year terminal programs leading to a certificate are offered in poultry husbandry, animal husbandry, dressmaking, and cafeteria management. Considerable flexibility is allowed in these two-year programs so as to meet the varied needs and interests of the students. These programs are designed for those who wish to prepare for productive enterprises and services.

All students who pursue programs of study in agriculture leading to the degree of Bachelor of Science should follow the Basic Curriculum in Agriculture for the freshman and sophomore years.

All students who pursue programs of study in home economics leading to the degree of Bachelor of Science should follow the Basic Curriculum in Home Economics for the freshman and sophomore years.

In the last quarter of the sophomore year the student should elect his major and, at this time, work out a complete program of study for his junior and senior years in conference with the Head of the Department of his major field. With the approval of the Dean of the School of Agriculture this program constitutes the student's requirements for graduation.

Normally a minimum of 30 quarter hours will be required for a major in any subject matter area, plus an additional 15 quarter hours in closely related courses. A minimum of 200 quarter hours of credit and a grade point average of 1 is required for graduation.

Students who plan to do graduate work in such specialized areas as soil science, veterinary medicine, nutrition and entomology will be permitted to pursue a program of study which includes courses designed to develop a sound scientific background.

The School of Agriculture offers a two-year pre-veterinary curriculum which meets the requirements for admission to schools of veterinary medicine as recommended by the American Association of Veterinary Medicine.

This program includes basic courses which are more than adequate for admission to most of the veterinary schools.

Since there is no School of Veterinary Medicine in North Carolina, the State has provided funds that will permit a limited number of students each year to receive training in veterinary medicine at an approved institution without having to pay out-of-state tuition fees normally charged students who are not residents of that state.

The Agricultural and Technical College of North Carolina has been designated to pass on the educational qualifications of all Negro students in North Carolina who apply to a School of Veterinary Medicine under this plan.

BASIC CURRICULUM IN AGRICULTURE

Freshman

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212, 213	5 (5-0)	5 (5-0)	5 (5-0)
Geology 111	4 (3-2)	.....	.....
Mathematics 311, 312	5 (5-0)	5 (5-0)	.....
Animal Husbandry 111	3 (2-2)	.....	.....
Botany 111 .....	.....	5 (3-4)	.....
Zoology 111 .....	.....	.....	5 (3-4)
Physics 311 .....	.....	.....	5 (3-4)
Poultry Husbandry 111 .....	.....	3 (3-4)	.....
Field Crops 111 .....	.....	.....	3 (2-2)
Air or Military Science 211, 212, 213	2 (3-2)	2 (3-2)	2 (3-2)
Physical Education 210a, 210b, 210c	1 (0-2)	1 (0-2)	1 (0-2)
	—	—	—
	20	21	21

Sophomore

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113	5 (3-4)	5 (3-4)	5 (3-4)
Animal Husbandry 122 .....	.....	3 (2-2)	.....
Agricultural Engineering 111, 122	3 (1-4)	3 (2-2)	.....
Poultry Husbandry 112	3 (2-2)	.....	.....
Horticulture 111 .....	.....	.....	3 (2-2)
Ornamental Horticulture 112 .....	.....	3 (2-2)	.....
Field Crops 121 .....	.....	3 (2-2)	.....
Economics 231 .....	.....	.....	5 (5-0)
Soils 123 .....	.....	.....	4 (2-4)
Air or Military Science 221, 222, 223	2 (3-2)	2 (3-2)	2 (3-2)
Physical Education 220a, 220b, 220c	1 (0-2)	1 (0-2)	1 (0-2)
Bacteriology 123	5 (3-4)	.....	.....
	—	—	—
	19	20	20

TWO-YEAR PRE-VETERINARY MEDICINE CURRICULUM**First Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212, 213	5 (5-0)	5 (5-0)	5 (5-0)
Math 311	5 (5-0)	.....	.....
Botany 111	5 (3-4)	.....	.....
Zoology 111, 112 .....	.....	5 (3-4)	5 (3-4)
Chemistry 111, 112 .....	.....	5 (3-4)	5 (3-4)
Air or Military Science 211, 212, 213	2 (3-2)	2 (3-2)	2 (3-2)
Physical Education 210a, 210b, 210c	1 (0-2)	1 (0-2)	1 (0-2)
	_____	_____	_____
	18	18	18

Second Year

Chemistry 113, or 121, 131	5 (3-4)	5 (3-4)	.....
Physics 311, 312 .....	.....	5 (3-4)	5 (3-4)
Zoology 123, 143	5 (3-4)	4 (2-4)	.....
English 224 .....	.....	.....	3 (2-2)
Animal Husbandry 111, 122	3 (2-2)	3 (2-2)	.....
Zoology 142 .....	.....	.....	3 (3-0)
Poultry Husbandry 111	3 (2-2)	.....	.....
Economics 231 .....	.....	.....	5 (5-0)
Air or Military Science 221, 222, 223	2 (3-2)	2 (3-2)	2 (3-2)
Physical Education 220a, 220b, 220c	1 (0-2)	1 (0-2)	1 (0-2)
	_____	_____	_____
	19	20	19

SCHOOL OF EDUCATION AND SCIENCE

WARMOTH T. GIBBS, *Dean*

The School of Education and Science offers to the student opportunity to prepare either for teaching or for any one of several distinct vocational and professional pursuits. The courses are so constructed that the student, although specializing, may also come in contact with subjects that possess wide cultural value and insure that broader outlook upon life which characterizes the educated man or woman. This school also offers professional courses in subjects required by the State Board of Education for the Standard "A" grade teaching certificate.

This School includes the following fields of study: air science, economics, education, English, foreign languages, general science, military science and music, physical education and the social sciences as well as subjects required for completion of the pre-medical and pre-law courses.

REQUIREMENTS FOR ADMISSION

Admission requirements to the School of Education and Science are the same as those given for entrance to the Freshman Class. See page 34.

GRADUATION REQUIREMENTS

A minimum of 200 credit hours and 200 grade points is required for graduation.

In addition to majors and minors, each candidate for graduation will be required to meet the following distribution requirements both as to subjects and hours:

- †1. Foreign language, 10 hours (Fr. 214 and 215) for those who present two admission units of high school credit in the same language, and who pass the placement test in same; others take Fr. 211, 212, 213.
- *2. Mathematics, 10 hours.
3. English composition, 15 hours; and literature (English or American) 5 hours.
4. Science: 10 hours of chemistry or physics and 10 hours of biological sciences.
5. Social Science; History: of the Negro, of America, of Civilization‡, 5 hours of each; 15 hours total.
6. Music and art appreciation, 9 hours for those planning to teach; others 6 hours.
7. R.O.T.C., 12 hours.

*Persons holding a satisfactory State teachers' certificate may substitute general science for mathematics.

†Foreign language is elective in the field of Physical Education.

‡An additional course in the social studies may be taken in lieu of history of civilization.

8. Health and physical education, 9 hours for those planning to teach; others 6 hours.
9. Orientation, 1 hour.
10. Vocations, 6 to 10 hours.
11. Research, 3 hours.

The graduation requirements may be further classified under the following heads:

1. Required freshman-sophomore courses. These are the general college courses required in the School of Education and Science to be completed before advancing to major work.
2. Major and Minor courses. Each student is required to select a major and a minor and complete a concentration in each. This will be selected at the end of sophomore year and completed during the junior and senior years.
3. Electives. The number of hours required for a major or a minor varies from department to department, but where a student has completed his required freshman-sophomore courses, his major and minor, and is still short of the two hundred hours required for graduation, he must complete a number of elective courses and hours sufficient to make up the deficiency.
4. Research Project. Each student taking a degree in the School of Education and Science will be required to complete an independent research project of his own choice. This will be taken during the senior year.

All of the above mentioned requirements will be adhered to rigorously. Students are urged therefore to familiarize themselves with them early in their college career and follow them consistently in making out their schedules from quarter to quarter. Students should realize that while faculty advisers will be available and willing to assist them in adjusting curriculum and schedule problems, each student, not the adviser, is responsible for the execution of his own program of study.

REQUIRED COURSES FOR FRESHMEN AND SOPHOMORES

	<i>Hours</i>
English 211, 212, 213	15
English 220, 221, or 223	5
Foreign language (one language 214, 215 or 211, 212, 213)	10-15
Mathematics 311, 312	10
History 210, 213; 221 or 222	15
Chemistry 111, 112 or Physics 311, 312	10
Biological Science (Botany 111, Zoology 111)	10
Music and Art Appreciation	6- 9
R.O.T.C. 211, 212, 213, 221, 222, 223 (for men)	12
Physical Education, six quarters	6- 9
Orientation (Ed. 211)	1
Vocations	6-10

SAMPLE SCHEDULE

The following are typical examples of how normal schedules might be arranged. Others more in accord with the student's interest and aptitudes might be selected:

Freshman

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212, 213	5 (5-0)	5 (5-0)	5 (5-0)
Math. 311, 312	5 (5-0)	5 (5-0)	.....
French or Spanish 211, 212, 213	5 (5-0)	5 (5-0)	5 (5-0)
Ed. 211	1 (1-0)	.....	.....
ROTC 211, 212, 213	2 (2-2)	2 (2-2)	2 (2-2)
Physical Education	1 (0-2)	1 (0-2)	1 (0-2)
Mus. 211, 212, 213			
or			
Art 314, 315, 316	2 (2-0)	2 (2-0)	2 (2-0)
Vocations	3 (0-6)	3 (0-6)	3 (0-6)
	19	19	19

Sophomore

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Eng. 223, 220, 221	5 (5-0)	5 (5-0)	5 (5-0)
Chem. 111, 112, or Phy. 311, 312	5 (3-4)	5 (3-4)	.....
Bot. 111	5 (3-4)	.....	.....
Zool. 111 .....	.....	5 (3-4)	.....
Math. 313 .....	.....	.....	5 (5-0)
ROTC 221, 222, 223	2 (3-2)	2 (3-2)	2 (3-2)
Physical Education	1 (0-2)	1 (0-2)	1 (0-2)
Mus. 221, 222, 223, or Art 327, 328, 329 ...	2 (2-0)	2 (2-0)	2 (2-0)
History .....	.....	5 (5-0)	5 (5-0)
Education 221 .....	.....	.....	5 (5-0)
French or Spanish	5 (5-0)	.....	.....
	19	19	19

MAJORS AND MINORS

A student upon entering his third year is expected to concentrate in two definite fields of study. In arranging his work he must conform to the following regulations: (1) At least forty-five hours of the total number required for graduation must be chosen from a particular subject or field, in which he must maintain a satisfactory major grade point average. This will constitute the student's major group. (2) At least 30 hours must be chosen from another subject or field, in which he must maintain a satisfactory grade point average*. This will constitute his minor group. The major should represent the student's principal field

*Fifty hours are required for a major in English; forty hours for a minor.

of interest and the minor, his second field. Persons preparing to teach are advised to complete majors in two fields.

No student is permitted to major or minor in a subject until he has filled out and turned in to the dean of the School of Education and Science the special application form for majors and minors and has, thereby, received the written approval of the heads of the two subject-matter departments in which he proposes to concentrate; that is, the department of his major and minor, or of his two major fields.

Students must realize that the requirements for a state teaching certificate are set up and administered by the State Department of Public Instruction and not by the college. While the completion of a college major ordinarily carries with it more courses and credits than are needed for meeting the requirements for certification, those students planning to qualify for a teaching certificate should consult the requirements of their respective states and take care to see that the courses needed for same are included. This is equally important for those desiring certification in the minor field also. They should include these requirements as they make out their program from quarter to quarter.

The following are suggested as fields for major study in this School:

1. Biological Science.
2. Chemistry or Physics.
3. English.
4. Mathematics.
5. Modern Languages.
6. Music.
7. Physical Education.
8. The Social Sciences.

For a minor a student may elect Art, Air Science, Health Education, Military Science, Business or any of the fields mentioned above.

ELECTIVES

In addition to minimum distribution requirements, and a major and a minor, which are required, each student is permitted to elect such additional courses as will be necessary to satisfy the graduation requirements; in so doing he is urged to exercise the greatest care in order that his choice may add further to the integration and coordination of his program. All such electives must be made with the approval of the student's adviser.

The elective work may be taken in any of the departments indicated previously or from any other department of the institution subject to the approval of the Dean of the School of Education and Science.

Students are urged to elect courses in accordance with a definite plan, and with a definite object in view. Those looking forward to teaching or working in small towns or rural districts especially should bear in mind that the number of trained workers in any given department is likely to be small and the facilities limited. They should therefore use their choice of electives in acquiring knowledge or skills that will be of immediate use to them in such communities. Courses in general agriculture, animal husbandry, commercial industries, industrial arts, foods and clothing may prove to be the most beneficial as electives for such students. These are strongly recommended as electives for such teachers and workers.

SENIOR RESEARCH RULES

A candidate for the bachelor's degree in the School of Education and Science must satisfactorily complete a senior research project as part of the graduation requirement. This project may be written in the candidate's major or minor field, and the student may choose any instructor in the field in which he is writing the paper as his adviser. This adviser will automatically become a member of the senior research committee, the chairman of which is the instructor in charge of the research course (Research 246). The candidate is responsible both to his adviser and then to the chairman of the Senior Research Committee.

At the discretion of the instructor of Research 246, students who are candidates for graduation with honors or who for any other reason are capable of or willing to undertake a thesis of greater scope and higher caliber than required for other projects will be expected to have same typed and bound. It must be signed by the candidate's adviser, the Chairman of the Senior Research Committee, and the Dean of the School of Education and Sciences. It becomes the property of the College Library.

Each candidate is required to take the research course at least one quarter preceding the quarter in which he expects to graduate. Thus, students wishing to graduate in the spring must take the course not later than the Winter Quarter; those wishing to graduate in August may wait until the Spring Quarter preceding graduation.

The student is required to finish the research project by the end of the quarter in which he is taking Research 246. If, however, circumstances over which he has no control prevent him from completing the project in that time, it must, nevertheless, be completed on or before May 15 in the case of persons expecting to graduate in the spring. If a candidate for graduation in August is unavoidably prevented from completing his paper while taking the course, he must finish it two weeks before the date of graduation.

COURSES PRELIMINARY TO ADMISSION TO MEDICAL COLLEGE

This institution has been rated as class "A" by the American Medical Association as to qualifications for giving pre-medical-training. Students completing the prescribed course will be required to pass the national medical school admission test and the graduate record examination.

All students planning to study medicine are urged, therefore, to complete the four-year course and receive their degree before entering a medical school.

PRE-MEDICAL COURSE

Students are advised to select subjects in college which assure a broad background for later medical study rather than merely confirming themselves to courses and fields required in the medical curriculum. Electives should include psychology, political science, history, economics, sociology, and mathematics.

The following represent the minimum requirements in general for admission to class "A" Medical Schools:

	<i>Quarter Hours</i>
*Chemistry (inorganic)	15
Chemistry (organic)	10
Physics	15
Biology	12
English (composition and literature)	15
A modern foreign language (a reading knowledge)	12
Electives	10-18

OPPORTUNITIES FOR WOMEN

All courses in the College are open to women on the same basis as men. There is a great demand for well-trained women not only as teachers but in practically all fields of endeavor. Accordingly, women registering in the teacher training division may, with approval of their advisers, select courses in any other division or department of the institution.

The aim of this division is to give the women as well as the men every opportunity to take full advantage of all the facilities of the College in developing the best and most comprehensive education possible.

*Pre-medical students and majors or minors in Chemistry should register for Chemistry 111, 112, and 113 in successive quarters.

SCHOOL OF ENGINEERING

J. M. MARTEENA, *Dean*

The organization of the School of Engineering includes, for the purpose of administration, the Department of Architectural Engineering, Electrical Engineering, Mechanical Engineering, Engineering Mathematics, Engineering Physics, Business, Fine Arts and Industrial Education. This organization enables the school to offer vocational, scientific and engineering instruction to help prepare the students to meet the needs of the people, industry and the various technical and professional fields.

The curricula offered include four-year courses of study leading to the Bachelor of Science Degree and professional courses in subjects required by the State Board of Education to qualify for the standard "A" grade teaching certificate in many fields.

The Department of Industrial Education offers curricula in Industrial Arts and Vocational Industrial Education with majors in Auto Mechanics, Cabinet Making, Carpentry, Machine Shop, Masonry, Plumbing, Radio and Television, Shoe Repairing, Tailoring and Welding.

In keeping pace with the increasing demands of industry, society and progressive education the school is rapidly improving its staff and expanding its facilities and physical plant.

ADMISSION TO THE SCHOOL OF ENGINEERING

The admission requirements are generally the same as those given for entrance to the freshman class. One year of algebra and one year of plane geometry are required for students electing a curriculum leading to a B.S. degree. Students admitted with conditions in any subjects will be required to remove them during their freshman year.

Students electing an engineering curriculum are required to have credit in Solid Geometry in addition to the above requirements.

ADVANCED STANDING

Students who have attended college of approved standing will be given appropriate credit for work completed there, upon the presentation of the proper certificate to the Registrar, who will determine the credits for the curriculum which the student wishes to take.

REQUIREMENTS FOR GRADUATION

The requirements for graduation in any division of the School of Engineering are the satisfactory completion of all courses in one of the prescribed curricula.

OUTLINE OF THE FIRST YEAR'S WORK OF ALL FOUR-YEAR CURRICULA IN ENGINEERING

In order to permit all students in the School of Engineering to find out definitely what courses they desire to pursue the first year of all four-year curricula is made uniform.

An inspection trip to visit such industrial installations as a hydro-electric plant, a turbo-electric plant, a steel or aluminum manufacturing and fabrication plant, outstanding construction projects, etc., will be required for graduation in all curricula of engineering.

The inspection trip will be planned by the heads of the various departments of engineering for senior students and will take place during the Winter quarter of each year.

A fee of fifty (\$50.00) dollars will be charged all senior students in engineering to cover expenses for this trip.

Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113*	5 (3-4)	5 (3-4)	5 (3-4)
Mathematics 311, 312, 313‡	5 (5-0)	5 (5-0)	5 (5-0)
English 211, 212, 213	5 (5-0)	5 (5-0)	5 (5-0)
Mechanical Drawing, M.E. 311, 312	3 (0-6)	3 (0-6)	.....
Descriptive Geometry, M.E. 314	.....	.....	3 (1-4)
†Military or Air Science, 211, 212, 213	2 (2-2)	2 (2-2)	2 (2-2)
	—	—	—
	20	20	20

*Students in Fine Arts and Industrial Education are not required to take Chemistry 113. Students in Industrial Education will take I.A. 341 and music in their Freshman year.

†Students in Fine Arts may substitute History 213 for Math 313 and Art 320 for Chemistry in the Spring Quarter.

†Students who are exempt from military or air science are required to take other courses to make up for the 12 credit hours.

THE SCHOOL OF NURSING

WILLETTA S. JONES, *Dean*

The School of Nursing of the Agricultural and Technical College of North Carolina was established by the Legislature in 1953 and offers a four-year basic program consisting of two academic and two calendar years and leads to a Bachelor of Science Degree.

The program is built upon the principles that the education of nurses within the collegiate organization must provide not only for the scientific and technical skills needed by the student but also for her development in social responsibilities and general cultural attributes. Secondly, these aspects of education for the student nurse must be as well integrated as possible.

The program has been planned to prepare the student for assuming expanding responsibilities in nursing, in inter-professional teams, and in community living. To achieve this goal, experiences will be provided to assist the student in developing technical skills, ability in communications and cooperative group endeavors, and in understanding physical, psychological and social aspects of health and disease and their application in the solution of health problems.

OBJECTIVES OF THE SCHOOL OF NURSING

1. To develop in the student the knowledge and skills essential to function effectively in staff level positions in hospitals, in public health agencies, and in the home caring for the sick.
2. To develop in the student an understanding of, and ability to impart to others, the importance of health conservation and prevention of disease.
3. To assist the student in her own personal development and ability to contribute to improved community living.
4. To guide and assist the graduating students in obtaining positions in those areas of nursing in which they have shown aptitude.

STATUS OF THE SCHOOL OF NURSING WITHIN THE COLLEGE

The School of Nursing, one of the seven schools within the Agricultural and Technical College, is organized and administered on the same basis as other schools in the College. The College assumes full responsibility for theoretical and clinical aspects of the program in nursing; it employs the faculty of the School of Nursing on the same basis as other faculty members; it applies educational standards and requirements, with allowance for special characteristics, equal to those in the other programs and it provides for the students in nursing to share with the other students all the facilities and resources of the College.

ADMISSION REQUIREMENTS

Candidates for the School of Nursing must:

1. Meet the general entrance requirements of the College and the units presented must include at least one year of algebra and one year of chemistry, physics, biology or general science.
2. Be graduated from an accredited high school.
3. Present a satisfactory record of achievement in their high school work.
4. Be in good physical and mental health.
5. Show satisfactory performance on standardized pre-entrance tests.

SELECTION AND ADMISSION OF STUDENTS

In selecting the students of nursing, the high school record, the general health record, performance on the pre-entrance tests, recommendations from high school principals and instructors and other evidences of personal fitness will be considered.

Personal interviews with applicants are desired.

The School of Nursing reserves the right to accept those applicants whose personal qualities, abilities and preparation give greatest promise of their profiting from the opportunities offered by the College.

Students are admitted each year at the beginning of the fall term.

THE PROGRAM IN NURSING

Approximately equal parts of general education and professional courses comprise the program. These two areas are as closely knit as possible and progress concurrently through the four years.

Clinical experience in associated institutions and agencies begins in the winter quarter of the second year. From this point students have an average of approximately twenty to twenty-four hours weekly in supervised clinical experience. Practice in nursery school, medicine, surgery, diet kitchen, operating room, obstetrics, pediatrics, tuberculosis, public health and psychiatry will be provided.

Complete details of the program are published in a separate bulletin which may be obtained upon request from the office of the registrar.

GRADUATE SCHOOL

F. A. WILLIAMS, *Dean*

The Agricultural and Technical College of North Carolina is a Land-Grant institution. Consequently, as would be expected its Graduate School offers to qualified students the opportunity to pursue and to undertake research in the areas of functional education as related to agriculture, technology, applied sciences and allied areas of study.

The immediate aims of the graduate program differ from those of undergraduate study. Hence, the college seeks to enable graduate students (1) to broaden their knowledge of a given area of study, (2) to increase their competence in a chosen area of study, (3) to develop power and interest in self-improvement, (4) to become imbued with a true spirit of research and (5) to become widely read in those fields related to their area of study.

In order to accomplish these aims the college desires to provide instruction and research to as wide a constituency as possible.

The office of the Graduate School is located in Room 103, Noble Hall. The office is open from 8:30 a.m. to 5:00 p.m. daily, except Saturday. On Saturday, the hours are from 8:30 to 12:00 m.

All communications and inquiries regarding matters connected with the Graduate School, whether from prospective students or from those whose work is in progress, should be directed to the Office of the Graduate School.

GRADUATE OFFERINGS

The college was authorized by the North Carolina Legislature in 1939 to offer to qualified graduate students the opportunity to pursue graduate work in agriculture, technical and applied sciences. The courses offered in these areas at the present lead to both the Master of Science degree and a Master's teaching certificate in agricultural education, industrial arts education, and rural education at the elementary and secondary levels. In addition to these regularly established programs of graduate studies, other courses in agriculture, technical and applied sciences may be pursued with the approval of the Graduate School.

ORGANIZATION

The Graduate School is under the administration of the Dean of the Graduate School, the Graduate Council, the Thesis Committee, and Examining Committees. The reports of these committees are subject to the approval of the College Council which is the policy making body of the college with the approval of the Board of Trustees.

ADMISSION

An applicant from the Agricultural and Technical College of North Carolina or from an accredited college or university requiring substantially the same undergraduate program as is required at this college, may be admitted to full graduate standing pending approval for candidacy. The applicant's undergraduate grades should be above average.

A student with relatively low grades on his undergraduate record from any institution will be assessed an entrance penalty of from six to nine quarter hours. Application for admission to graduate standing and two transcripts of the applicant's undergraduate record must be submitted to and approved by the Registrar in advance of registration. Admission to graduate standing does not admit a student either to a particular major or to candidacy for the Master's degree.

Full Standing: For admission to graduate study in full standing the applicant must meet the following requirements:

1. Graduation from an institution whose requirements for the bachelor's degree are substantially equivalent to those of the Agricultural and Technical College.
2. An undergraduate grade of "C" or better.
3. Undergraduate training in the subject matter of the field, in which the applicant expects to take graduate work, substantially equivalent to the requirement for undergraduate students in the same field at this College. This will be construed to mean that training in closely related or supporting subjects must also be adequate to carry on advanced study in the field of the applicant's choice.

Provisional or Temporary Standings: The applicant who does not meet all the requirements for admission to full standing in the Graduate School may be admitted to provisional or temporary standing. Such admission will be based on written application, setting forth the circumstances involved, and with the approval of the College Registrar and the Dean of the Graduate School. The student will be advised of any deficiencies or other conditions to be met to attain full standing.

The student admitted to provisional or temporary standing shall be admitted to full standing upon meeting the following requirements:

1. The completion of at least 15 hours of work for graduate credit with a grade of B or better in three-fourths of such graduate work.
2. The removal of any course or subject-matter deficiencies which were specified at the time of his admission to Provisional Standing in the Graduate School.

Admission to graduate study does not imply admission to candidacy for an advanced degree. Such candidacy is determined after the student has demonstrated that he has ability to do work of graduate quality as shown in the passing of a qualifying examination.

VETERAN'S ADMISSION

The United States Veterans Administration has approved the Agricultural and Technical College of North Carolina as an institution for training under Public Law 16—Vocational Rehabilitation Act and Public Law 346—the Service Men's Readjustment Act of 1944 (G. I. Bill of Rights) and Public Law 550. The College, accordingly, encourages the enrollment of Veterans and offers its facilities to those qualified for attendance to the full extent of its accommodations in its Graduate School. The rules for admission and continued registration for demobilized students are, in general, the same as those operative for other students.

REGISTRATION AND ASSIGNMENT

Students who have been admitted to full-time graduate study, register, obtain their assignments from the Dean of the Graduate School, and pay their fees during the regular registration periods.

Not more than fifteen quarter hours, including research, may be assigned in a single quarter, nor more than nine quarter hours during a single summer session. An in-service or part-time student follows the same procedure as a full-time student.

REQUIREMENTS FOR THE MASTER'S DEGREE

The requirements for the Master's degree are:

- (1) Forty-five (45) quarter hours including three (3) hours for a thesis.
- (2) The successfully passing of a qualifying examination.
- (3) Approval of a proposed thesis.
- (4) A cumulative average of two or more grade points.
- (5) Passing of a final examination in subject matter and thesis.
- (6) Preparation of an abstract of the thesis.
- (7) A minimum residence of one year.

Residence Requirements: The minimum requirements of candidates for the Master's degree is one academic year. Most times a longer period of residence will prove necessary.

Not more than six quarter hours of credit toward the Master's degree may be allowed for acceptable graduate work completed elsewhere. Such credit cannot therefore shorten the minimum period of full-time residence work required at the Agricultural and Technical College of North Carolina. The Graduate School also conducts regular classes in the evenings and on Saturdays for which graduate credit is granted.

All work offered for the Master's degree, whether in the regular academic year or in the Summer Session, must be completed within a period of six years from the time the graduate program is started.

Program of Study: At the time of admission to the Graduate School the student, on the advice of the Dean, may be assigned to an adviser who advises him throughout his course. *This assignment is usually made after the student has successfully passed the qualifying examination.* The choice of an adviser is largely determined by the student's choice of a major subject or field.

The program of study may consist of courses chosen from one department or it may include such cognate courses from other departments as may in individual instances seem to offer greatest immediate and permanent values.

Under ordinary circumstances graduate programs, including electives or undergraduate courses, are limited to 15 hours for any one quarter.

Admission to Candidacy: To become admitted to candidacy for a degree, a student must have been unconditionally admitted to graduate standing, and must have been approved by his adviser and the Dean of the Graduate School for his particular area of study. Candidacy is based on an examination of the student's undergraduate record, and the passing of a qualifying examination. The minimum prerequisite is 15 quarter hours over and above any entrance deficiencies or penalties. All arrangements and agreements are tentative until the student has been admitted to candidacy for a degree.

Thesis: The Master's thesis is intended to demonstrate the student's ability to discover a problem, collect, arrange, interpret and report pertinent data or material on a special problem. A publishable contribution is highly desirable. The thesis is expected to exhibit insight into the thesorial problem and competence in the use of appropriate English, and scholarly methods.

Abstract: A candidate for the Master's degree is required to prepare an abstract of the thesis to the final examination before being admitted. The abstract should not be less than fifteen hundred (1500) words in length.

EXAMINATIONS

Course Examinations: Final examinations are administered at the close of each quarter or summer session.

Qualifying Examinations: On the completion of fifteen (15) quarter hours of graduate work, a graduate student is required to take a qualifying examination which includes:

- a. An appraisal of the prospective candidate's college record.
- b. An examination of the student's graduate work.

- c. A 500-word, or more, written composition on some assigned subject. This is done one-half hour before the oral examination is administered.
- d. An oral examination of not less than one hour, which usually includes:
 1. Questions on general education.
 2. Questions on educational methods and procedures.
 3. Questions on the student's subject matter specialty including his specific subject matter and educational areas.
 4. Questions on current socio-economic problems and current literature in the prospective candidate's field of study.
 5. Questions which will demonstrate the student's ability to do creative or reflective thinking.

Final Oral Examinations: Candidates for the Master's degree are required to appear before an examining committee and exhibit their fitness to receive a Master's degree for a period of two hours in length. This examination will cover the candidate's thesis and major field.

NON-DEGREE ENROLLMENT

Graduate work may be taken by students who are not candidates for a Master's degree. Such enrollment permits the special privilege of a wider range in the selection of subjects. The courses selected should, however, bear an appropriate relation to one another. A statement of the subjects must be submitted to the Dean of the Graduate School. Admission for such study is based upon the same requirements as prospective candidates for the Master's degree.

GRADING SYSTEM

The work of graduate students performed in connection with research work and the thesis should be reported as "P" indicating progress until the work has been completed when a final grade is assigned. All other work is reported as "A" Excellent, "B" Average, and "C" Below Average. A grade below "C" is not accepted for graduate credit. A grade of "C" may be compensated by earning an "A" in another course. Should a candidate receive more than three grades below "B" the Dean of the Graduate School may request that the student discontinue graduate work.

WITHDRAWAL FROM THE COLLEGE

A graduate student who desires to withdraw from the College must apply to the Dean of the Graduate School for permission to withdraw in good standing. If the student leaves the College at any time during the Quarter, without communicating with the Dean, he will be marked as having failed in all of his courses for the Quarter. *No withdrawal from the College will be permitted after two weeks prior to the beginning of final examinations.*

The written permission of the Dean shall be filed with the Registrar at once by the student in order that the proper entry may be made upon the College record.

CHANGES IN GRADUATE COURSES

A graduate student who desires to discontinue a course and/or add a course should procure three blanks entitled, *Approval of Change of Course* and have them signed by the Dean of the Graduate School and the Registrar. This should be done within one week from the beginning of each quarter unless permission is granted otherwise by the Graduate School.

COLLEGE SENIORS

Regularly enrolled seniors who lack not more than six quarter hours to meet requirements for graduation may register for additional courses to complete a normal schedule, in the Graduate School. Such additional courses may be counted towards the Master's Degree, after the Bachelor's Degree has been granted, but they will not be counted for meeting requirements for both the Bachelor's and the Master's Degree.

COLLEGE STAFF AND GRADUATE WORK

Full-time members of the college staff with the president's approval may be permitted to register for not more than three hours, or one course, per quarter in the Graduate School, provided such would not interfere with their regular College duties.

RESPONSIBILITY OF GRADUATE STUDENTS

The responsibility of course enrollment rests entirely upon the student. He should read the regulations carefully, and should follow them in all matters.

Members of the faculty are always ready to advise students and assist in planning their study program, but they are not responsible for enforcing the regulations of the Graduate School.

GRADUATE COURSES DURING THE SUMMER

The College offers opportunities to pursue regular graduate courses leading toward the Master's degree during the summer in connection with the Summer School. Details regarding courses offered, facilities for study, environment, etc., may be found in the Summer School Catalogue, a copy of which is available upon request to the Director of the Summer School.

TUITION AND FEES

Full-time Graduate Students: Full-time graduate students pay the same fees as undergraduate students.*

*See page 54 for a full explanation of fees.

Graduation Fee: Before receiving a Master's degree, students are required to pay a graduation fee of \$50.00 to cover cost of library usage, diploma, thesis binding, and publication of an abstract.

A rental fee will also be charged for cap, gown and hood.

HOUSING

The college provides housing accommodations for a limited number of graduate students. Information on housing for female students will be furnished by the Dean of Women. Requests for information on housing for male students should be directed to the Dean of Men.

Mature graduate students are able to obtain rooms at a reasonable rate in private homes relatively near the college. Prospective graduate students who are married and desire housing should contact either the Deans of Men and Women or the Graduate Office.

COURSE ANNOUNCEMENTS

The quarter in which a course is to be offered will be found in the regular college schedule of courses. The college reserves the right to discontinue any course for which the registration is not sufficiently large. As would be expected, at the graduate level, student demands frequently make it necessary to vary course offerings made in advance.

GRADUATE CERTIFICATION REQUIREMENTS AT THE MASTER'S LEVEL

The North Carolina State Department of Public Instruction has issued the following requirements to be followed by those who desire to obtain a Master's degree and also a state graduate teaching certificate. A summary of these requirements follows:

- I. Graduate Teacher's Certificate In Agricultural Education:
 - A. Hold or be qualified to hold the Class A teacher's certificate in Secondary Agricultural Education.
 - B. Have at least three years' teaching experience.
 - C. Have a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction.
 - D. The distribution of the Course work will include:
 1. General Education 12 quarter hours
 2. Agricultural Education 12 quarter hours
 3. Technical Agriculture 18 quarter hours
(Including Agronomy, Horticulture, Poultry, etc.)
 4. Thesis 3 quarter hours

II. Graduate Teacher's Certificate In Industrial Arts Education:**1. Required courses**

Ed. 601 Theory of American Public Ed.	Credit 3(3-0)
Ed. 605 Teaching Principles	Credit 3(3-0)
Ed. 606 The Curriculum	Credit 3(3-0)
Ed. 621 Educational Psychology	Credit 3(3-0)

2. Subject-matter courses according to certificate 18 Q. H.
3. Electives (Ind. Ed.) and Thesis 15 Q. H.**III. Graduate Secondary Teacher's Certificate:****A. Hold or be qualified to hold the Class A high school teacher's certificate.**
B. Have three or more years' teaching experience.
C. Have a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction. This would include:
1. Subject matter in the certificate fields 18 quarter hours
2. Education (philosophy, principles, curriculum, psychology, etc.) 9 quarter hours
3. Electives and Thesis 18 quarter hours**IV. Graduate Elementary Certificate:****A. Hold or be qualified to hold the Class A primary or grammar grade certificate.**
B. Have three or more years' teaching experience.
C. Have a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction. This credit would include:
1. Academic work 9-18 quarter hours
This should include subject matter in those fields in which there are manifest weaknesses in the equipment of the individual, as well as subject matter that would strengthen points already strong.
2. Education (philosophy, principles, curriculum, psychology, etc.) 9 quarter hours
3. Electives and Thesis 18-24 quarter hours

Requirements for Principal's Certificate, effective as of July 1, 1943:

A. Hold or be qualified to hold the Class A teacher's certificate (secondary or elementary).
B. Have three years' teaching experience within the past five years.
C. Hold a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction.

D. Have credit for a minimum of 12 semester hours (18 recommended) of graduate work in Education selected from the following areas:

1. Fundamental Bases of Education
 - a. The Curriculum, at least 2 semester hours required
 - b. Human Growth and Development
 - c. Social Foundations of Education
2. Instructional and Supervisory Techniques
 - a. Principles of Supervision, at least 2 semester hours required
 - b. Teaching Procedures
 - c. Guidance and Pupil Personnel and Accounting
 - d. Measurements
3. Organization and Administration
 - a. High School Administration, at least 2 semester hours required
 - b. Elementary School Administration, at least 2 semester hours required
 - c. General Administration
 - d. School Plant
 - e. Staff Personnel
 - f. Community Relations

E. Electives 12-18 semester hours
This elective credit may be the candidate's choice, subject to such requirements as the institution may have for the Master's degree, but it should be designed primarily to add to one's skill as a teacher.

GRADUATE PROGRAM IN EDUCATION FOR TEACHERS AND PRINCIPALS

This program is designed especially for persons who are interested in some phase of educational, industrial, social or government work and is organized so that one may complete the North Carolina requirements for the graduate certificate and the Master of Science degree simultaneously.

The program is flexible and will permit sufficient concentration in a given subject matter field to qualify for certification thus making it possible to secure teaching certificates in several fields.

The following is the general program to be pursued by graduate students to qualify for a teaching certificate:

A. For teaching certificates**1. Required courses**

Ed. 601. Theory of American Public Education or Ed. 607. History of Education	3 Q. H.
Ed. 622. Measurements and Evaluation	3 Q. H.
Ed. 612. Techniques of Research	3 Q. H.
Guid. 601. Field of Guidance	3 Q. H.
Ed. 621. Educational Psychology	3 Q. H.
Ed. 605. Teaching Principles	3 Q. H.
Ed. 606. Curriculum	3 Q. H.
2. Subject-Matter courses according to certificate	9-18 Q. H.
3. Thesis and Electives	9-18 Q. H.

B. For Principals and Supervisors**1. Required courses**

Ed. 601. Theory of American Public Education or Ed. 607. History of Education	3 Q. H.
Ed. 622. Measurements and Evaluation	3 Q. H.
Ed. 612. Techniques of Research	3 Q. H.
Ed. 605. Teaching Principles	3 Q. H.
Ed. 606. Curriculum	3 Q. H.
Ed. 609. School Planning	3 Q. H.
Ed. 626. H. S. Administration	3 Q. H.
Ed. 627. H. S. Supervision	3 Q. H.
Ed. 624. Elem. Sch. Administration	3 Q. H.
Ed. 625. Elem. Sch. Supervision	3 Q. H.
Guid. 601. Field Guidance	3 Q. H.
Social Science	3 Q. H.
2. Electives and Thesis	9 Q. H.

Graduate programs in certain other graduate areas will be outlined, on request, by Major Professor of the area concerned and the Dean of the Graduate School.

GRADUATE COURSES OF INSTRUCTION

Graduate courses are offered in the major departments of the college and are on single-term (quarter) basis.

Courses in the 500 series which may be pursued by graduate students are listed under the departments of the three major colleges of the institution.

AGRICULTURAL ECONOMICS

- 601. Economics of Agricultural Production.
- 602. Farm Organization and Management.
- 603. Land Economics.
- 604. Current Problems in Agricultural Economics.
- 605. Research in Agricultural Economics.

AGRICULTURAL EDUCATION

- 601. Administration and Supervision.
- 602. Curricular Construction in Vocational Agriculture.
- 603. History of Vocational Agriculture.
- 604. Community Problems in Agriculture.
- 605. Public Relations in Agriculture.
- 606. Research in Vocational Education.

AGRONOMY

- 631. The Soils of North Carolina.
- 634. Legumes and Grasses.
- 635. Crop Breeding.

ANIMAL HUSBANDRY

- 601. Research Studies in Animal Husbandry.
- 602. Poultry Research.
- 603. Seminar.

BACTERIOLOGY

- 601. Soil Bacteriology.
- 602. Dairy Bacteriology.

CHEMISTRY

- 601. Problems in Organic Chemistry.

EDUCATION

- 601. Theory of American Public Education.
- 602. Negro Education in the Bi-Racial System.
- 603. The County Training School.
- 604. The Small Negro Rural School.
- 605. Principles of Teaching.
- 606. The Curriculum.
- 607. History of American Education.
- 608. Philosophy of Education.
- 609. School Planning.
- 610. Special Workers and Services in Rural Education.
- 611. Audio-Visual Aids Program.
- 612. Techniques and Methods of Research.
- 613. Organization of Audio-Visual Programs.
- 614. Audio-Visual Aids Workshop.
- 615. Problems and Trends in Teaching Social Sciences.
- 616. Problems and Trends in Teaching Science.
- 617. Mental Hygiene for Teachers.
- 621. Educational Psychology.
- 622. Measurements and Evaluation.

- 623. Educational Sociology.
- 624. Elementary School Administration.
- 625. Elementary School Supervision.
- 626. High School Administration
- 627. High School Supervision.
- 628. Adult Education.

ENGLISH

- 601. Expository Writing.
- 602a. Studies in English Literature.
- 602b. Studies in English Literature.
- 603a. Problems in English.
- 603b. Problems in English.
- 604a. Aspects of American Literature.
- 604b. Aspects of American Literature.
- 605. Modern World Fiction.

GEOGRAPHY AND GEOLOGY

- 601. The Physical Universe.
- 602. Geology.
- 603. Geography of North America.
- 604. Conservation of Natural Resources.

GOVERNMENT

- 601. The Federal Government.
- 602. State and Local Government.
- 603. Government Finances.
- 605. The Constitution and Minorities.
- 606. Research and Current Problems.

GUIDANCE AND PERSONNEL WORK

- 601. The Field of Guidance.
- 602. Psychological Aspects of Guidance.
- 603. School and Community Guidance Programs.
- 604. Student Personnel: Program and Problems.
- 605. The Function of the Teacher in Guidance.
- 606. Case Work in Guidance.
- 607. Personnel Administration.
- 609. Guidance for Rural Youth.
- 610. Guidance in the School.
- 612. Techniques of Individual Analysis.
- 613. Techniques in Counselling.
- 614. Occupational Information.
- 615. Diagnostic Techniques in Guidance.
- 616. Administration of Guidance.
- 618. Guidance Laboratory (Practicum).

HISTORY

604. The Negro in the Reconstruction of the South.

INDUSTRIAL ARTS

608, 609, 610. Comprehensive Shop Problems.
611, 612, 613. Problems in Industrial Arts.
624. Laboratory Planning for Industrial Shops.

INDUSTRIAL EDUCATION

602. Current Problems in Industrial Education.
603. Industrial Psychology.
604. Supervision and Administration of Industrial Education.
605. Curriculum Laboratory in Industrial Education.
606. Research Problems in Industrial Education.
620. Co-operative Training.
631. General Industrial Education Programs.

MATHEMATICS

601. Theory of Equations.
605. Statistical Methods.

ORNAMENTAL HORTICULTURE

601. Research in Crops.
602. Research in Soils.

PHYSICS

602. Heat.
605. Modern Physics.

POULTRY SCIENCE

601. Production Studies and Experiments.

VOCATIONAL EDUCATION

619. Techniques in Educational and Vocational Guidance.
622. Tests and Measurements in Vocational Education.
628. Research in Special Problems.
631. The Teaching of Agriculture in the High School.

ZOOLOGY

601. Special Problems in Insect Control.

DESCRIPTION OF COURSES

DEPARTMENT OF AGRICULTURAL ECONOMICS

The Department of Agricultural Economics offers courses in farm management, agricultural marketing, agricultural finance, agricultural statistics, land economics, agricultural policy, agricultural prices, and rural sociology.

The Department offers curricula leading to the degree of Bachelor of Science in (1) Agriculture Marketing, (2) Farm Management, and (3) General Agricultural Economics.

Students who wish to major in this Department should follow the Basic Curriculum in Agriculture for the freshman and sophomore years (see page 63). The Head of the Department and faculty will assist the student in planning his program for the junior and senior years.

CURRICULUM IN AGRICULTURAL ECONOMICS

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Economics 122, 131, 145	3 (2-2)	5 (5-0)	3 (3-0)
Agricultural Economics 132, 146	3 (2-2)	.....	2 (2-0)
Economics 232, 233, 234	5 (5-0)	5 (5-0)	5 (5-0)
Mathematics 313, 321	5 (5-0)	5 (5-0)	.....
English 224 .....	.....	.....	3 (2-2)
Electives	3 ()	3 ()	3 ()
	<hr/> 19	<hr/> 18	<hr/> 16

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Economics 150, 501, 505	2 (2-0)	3 (2-2)	3 (2-0)
Agricultural Economics 508, 510 .....	.....	3 (0-6)	2 (2-0)
Rural Sociology 131	3 (3-0)	.....	.....
Political Science 231	5 (5-0)	.....	.....
English 231	3 (3-0)	.....	.....
Agricultural Economics 502 .....	.....	3 (3-0)	.....
Education 221 .....	.....	.....	5 (5-0)
Agricultural Economics 142 .....	.....	3 (3-0)	.....
Electives	3 ()	6 ()	6 ()
	<hr/> 16	<hr/> 18	<hr/> 16

CURRICULUM IN AGRICULTURAL MARKETING

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Economics 122, 131, 146	3 (2-2)	5 (5-0)	2 (2-0)
Dairy Husbandry 123, 142	3 (2-2)	3 (2-2)	.....
Economics 233	5 (5-0)	.....	.....
Political Science 231	5 (5-0)	.....	.....
English 224 .....	.....	3 (2-2)	.....
Rural Sociology 131 .....	.....	3 (3-0)	.....
Agricultural Economics 132 .....	.....	.....	3 (2-2)
Animal Husbandry 142 .....	.....	.....	4 (2-4)
Poultry Husbandry 143 .....	.....	.....	3 (3-0)
Horticulture 141 .....	.....	.....	4 (2-4)
Electives	3 ()	3 ()	3 ()
	<hr/>	<hr/>	<hr/>
	19	17	19

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Education 221	5 (5-0)	.....	.....
Agricultural Economics 142, 504, 505	3 (3-0)	3 (3-0)	3 (3-0)
Agricultural Economics 502, 508, 510	3 (3-0)	3 (0-6)	2 (2-0)
Home Administration 123	3 (3-0)	.....	.....
Business Administration 321 .....	.....	5 (5-0)	.....
English 231 .....	.....	3 (3-0)	.....
Electives	3 ()	3 ()	3 ()
	<hr/>	<hr/>	<hr/>
	17	17	16

CURRICULUM IN FARM MANAGEMENT

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Economics 122, 123, 131	3 (2-2)	3 (3-0)	5 (5-0)
Agricultural Economics 132, 145	3 (2-2)	3 (3-0)	.....
Animal Husbandry 132, 135	5 (3-4)	3 (3-0)	.....
Agricultural Engineering 131	3 (1-4)	.....	.....
Business Administration 321 .....	.....	5 (5-0)	.....
Dairy Husbandry 123 .....	.....	.....	3 (2-2)
Horticulture 141 .....	.....	.....	4 (2-4)
English 224 .....	.....	.....	3 (2-2)
Electives	3 ()	3 ()	3 ()
	<hr/>	<hr/>	<hr/>
	17	17	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Economics 141, 142, 503	3 (2-2)	3 (3-0)	3 (2-2)
Political Science 231	5 (5-0)	.....	.....
Soils 140	3 (3-0)	.....	.....
Agricultural Engineering 123	3 (1-4)	.....	.....
Agricultural Economics 502 .....	.....	3 (3-0)	.....
Poultry Husbandry 142 .....	.....	3 (3-0)	.....
Field Crops 131 .....	.....	3 (2-2)	.....
Agricultural Engineering 132 .....	.....	.....	3 (1-4)
Education 221 .....	.....	.....	5 (5-0)
Rural Sociology 131 .....	.....	.....	3 (3-0)
Electives	3 ()	3 ()	3 ()
	<hr/>	<hr/>	<hr/>
	17	16	17

122. Introduction to Agricultural Economics

The application of the fundamental principles of economics to agricultural production; the marketing of farm products; farm credit; land tenure and related economic problems of the farmer. Prerequisite: Economics 231. Credit 3 (2-2).

123. Farm Management

Fundamental principles of farm organization and management. Enterprise selection, size of business, budgeting, farm work programs, farm analysis, leases, layout and general managerial problems. Prerequisite: Ag. Econ. 122. Credit 3 (3-0).

131. Marketing Agricultural Products

Fundamental principles and practices of marketing as applied to farm products; marketing cost; an appraisal of marketing methods. Prerequisite: Ag. Econ. 122. Credit 5 (5-0).

132. Agricultural Statistics

Elementary statistical methods as applied to all areas of agriculture, and an introduction to the use of calculating machines. Credit 3 (2-2).

141. Farm Records

Methods and practices employed in taking farm inventories, keeping records and accounts on the farm; receipts and expenses, preparing financial statements, analysis and interpretation of results obtained from farm transactions. Credit 3 (2-2).

142. Agricultural Finance

Farm credit needs; the classification of farm credits; an analysis of the Farm Credit Administration and other credit agencies and institutions. Credit 3 (3-0).

145. Land Economics

Land as a factor of production; classification and use of rural land; tenure policies; public interest in a land policy, including settlement, credit, etc. Credit 3(3-0).

146. Land Income

Economics of land use, theories of rent, principles of land evaluation and taxation. 2(2-0).

147. Agricultural Cooperation

Principles and problems of organization, management, and supervision of cooperative endeavors of farmers in buying and selling, and service associations. Credit 3(3-0).

148. Agricultural Legislation

An analysis of legislation and regulations of federal, state and local levels affecting the farm business. The effects of such legislation upon agriculture. Credit 3(3-0).

149. Southern Resources

Population, agriculture, transportation, industry, wealth, social areas, etc. of the South, and particularly North Carolina. It also includes the formulation of solutions for economic and social problems. Credit 3(3-0).

150. Farmer Movements

A study of the history, development and programs of the major farm organizations in the United States; present and past. Credit 2(2-0).

Advanced Undergraduates and Graduates**501. Advanced Agricultural Statistics**

Advanced statistical methods as applied to agriculture; special consideration will be given to index numbers, tabulation of numerical data, graphic presentation, analysis and interpretation of statistical data, and the formulation of agricultural problems for study. Prerequisite: Ag. Econ. 132. Credit 3(2-2).

502. Agricultural Policies

The formulation and impact of public policy on agriculture; the importance of agriculture in the national and international economy; past, present and proposed agricultural programs and policies. Credit 3(3-0).

503. Farm Cost Accounts

A study of records needed to determine the profits of various agricultural enterprises; how to set up and keep these accounts; interpretation of results, and their specific use in farm management. Credit 3(2-2).

504. Land Appraisal

Factors determining land value; methods of evaluation; appraisal of farm land for specific use; for purposes of taxation, for making loans and for sale. Credit 3(3-0).

505. Agricultural Prices

Cyclical movement and seasonal variation of prices; the general price level; construction of index numbers; and control of agricultural prices. Credit 3(3-0).

506. Business Law

Fundamental principles of law as applied to business transactions of farmers; property rights; sales; negotiable documents of title; credit instruments. Credit 3(3-0).

507. Economics of Agriculture

A course designed to provide students with the tools of analysis for comprehending the problems of farm production. The evaluation of concepts of production. Credit 3(3-0).

508. Special Problems (Marketing, Farm Management and General Agricultural Economics)

This course is designed for students who desire to work out special problems in the field of agricultural economics. Consent of the chairman of the department must be obtained. Credit 3-6(0-6).

509. Advanced Farm Management

Plan, organization and management of different types of farms. Trips to nearby farms with study of organization and plans for re-organization. Credit 3(2-2).

510 Seminar in Agricultural Economics

Discussions and reports. Prerequisite: Consent of the instructor. Credit 2(2-0).

RURAL SOCIOLOGY**131. Principles of Rural Sociology**

Social systems, cultural patterns and institutional arrangements of people in rural environments in relation to those of towns and cities. Credit 3(3-0).

Advanced Undergraduates and Graduates**501. Rural Social Problems**

Population, education, religion, health, land tenure, parity income, farm labor and mechanization, and housing. Credit 3(3-0).

502. Rural Leadership

Opportunities and needs for rural leadership; educational and psychological requirements for various types of rural leaders. Credit 3(3-0).

503. The Rural Family

The institutional nature of the rural family, etc., role in the community including its relations to educational, religious, welfare and other community organizations. Credit 3(3-0).

504. Community Organization

Planning and organizing educational, health, recreational and religious activities for rural people. Credit 3(3-0).

505. Rural Standards of Living

Consumption behavior in the main community groups of our society. Credit 3(3-0).

506. Special Problem in Rural Sociology

Students will work on a problem in rural sociology under the guidance of a member of the faculty. Credit 2 to 4 hours.

DEPARTMENT OF AGRICULTURAL EDUCATION

The Department of Agricultural Education offers professional courses in agricultural education and cooperative agricultural and home economics extension work.

The Department offers curricula leading to the degree of Bachelor of Science in Agricultural Education.

Students who plan to major in Agricultural Education should follow the Basic Curriculum in Agriculture for the freshman and sophomore years. The Head of the Department and faculty will assist the student in planning a program for the junior and senior years.

CURRICULUM IN AGRICULTURAL EDUCATION**Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Education 222, 223, 231	3 (5-0)	3 (2-2)	3 (3-0)
Agricultural Economics 122, 123	3 (3-0)	3 (3-0)	.....
Agricultural Engineering 123, 124 .....	.....	3 (1-4)	3 (1-4)
Animal Husbandry 132	3 (3-0)	.....	.....
Dairy Husbandry 123	3 (2-2)	.....	.....
English 224	3 (2-2)	.....	.....
Horticulture 132, 135 .....	.....	3 (2-2)	3 (1-4)
Soils 132 .....	.....	3 (3-0)	.....
Botany 133 .....	.....	.....	3 (2-2)
Zoology 133 .....	.....	.....	3 (2-2)
Electives .....	.....	.....	3 ()
Ag. Educ. 500, 503	3 (2-2)	3 (3-0)	.....

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Education 233, 237	3 (3-0)	.....	3 (3-0)
Rural Sociology 131	3 (3-0)	.....	.....
Agricultural Education 141, 142	5 (5-0)	5 (5-0)	.....
Agricultural Education 501a, 143	3 (3-0)	.....	5 (5-0)
Agricultural Education 501b .....	.....	3 (3-0)	.....
Animal Husbandry 144 .....	.....	.....	3 (1-4)
Political Science 211 .....	.....	.....	3 (3-0)
Animal Husbandry 135 .....	.....	.....	3 (3-0)
Agricultural Engineering 501 .....	.....	3 (3-0)	.....
Electives	3 ()	3 ()	3 ()
	<hr/>	<hr/>	<hr/>
	17	14	20

AGRICULTURAL EDUCATION**141. Materials and Methods of Teaching Vocational Agriculture**

Principles of teaching as applied to vocational agriculture; making lesson plans, and organizing teaching aids to meet community needs. Prerequisite: Education 222, 223, 231. Credit 5 (5-0).

142. Observation and Directed Practice Teaching

Students will be required to spend eight weeks in an approved training center in observation and directed practice teaching. Prerequisite: Agric. Educ. 141. Credit 5 (5-0).

143. Problems in Teaching Vocational Agriculture

This course deals with the discovery and analysis of problems in the field, program building and evaluating instruction in vocational agriculture. Prerequisite: Agricultural Education 142. Credit 5 (5-0).

Advanced Undergraduates and Graduates**500. The Use of Audio-Visual Aids in Teaching Vocational Agriculture**

The use of charts, slides, film-strips, motion pictures, demonstrations, field trips, radios and other teaching aids for specific teaching situations. Special emphasis is placed on making preparation for and developing techniques in using and evaluating audio-visual aids. Credit 3 (2-2).

501. Evening School and Part-Time Work

Principles and problems of setting up and directing adult groups and out-of-school groups with emphasis on collecting and arranging materials for evening-class instruction. Credit 3 (3-0).

501a. Teaching Out-of-School Groups

Methods and materials used in teaching young farmers and adult groups. Course includes developing various teaching devices and aids for instructing out-of-school groups. Prerequisite: Education 223, 231, 233, and 237. Credit 3(3-0).

501b. Teaching Out-of-School Groups

Organizing, planning and teaching young farmers and adult classes; including working with community committees and organizations and evaluating the outcomes with such groups. Prerequisite: Education 501a. Credit 3(3-0).

502. Problem Teaching in Vocational Agriculture

Setting up problems for teaching unit courses in vocational agriculture. Credit 3(3-0).

503. The New Farmers of America

The practices and procedures of setting up local, district and state organizations. Emphasis will be given to training officers and members. Credit 3(3-0).

504. The Principles of Agricultural Education

Consideration of the principles and practices in agricultural education in keeping with research and new trends. Credit 3(3-0).

505. Guidance and Group Instructions

Group instructions applied to agricultural occupation, guidance and counseling with special reference to pupils in vocational agriculture. Credit 3(3-0).

Graduates Only**601. Administration and Supervision**

Administrative and supervisory problems of vocational agriculture, the practices and policies of local, state and federal agencies dealing with administration and supervision of vocational agriculture. Credit 3(3-0).

602 Curriculum Construction in Vocational Agriculture

Building unit courses in vocational agriculture and selecting subject matter to use with the course along with the common problems of evaluating the content of the course. Credit 3(3-0).

603. History of Vocational Agriculture

A brief review of vocational education in Europe and America. Special space to be given to vocational agriculture as it is developed in the United States. Credit 3(3-0).

604. Community Problems in Agriculture

Finding the common problems of the community that relate to agriculture and developing solutions. Credit 3(3-0).

605. Public Relations in Agriculture

This course deals with the means and methods of promoting and publicizing local programs in agriculture. The use of the press, radio and other devices is emphasized. Credit 3(3-0).

606. Research in Vocational Education

Research problems developed under the supervision of some member of the staff. Credit 3(3-0).

607. Philosophy of Vocational Education

This course deals with the underlying philosophy and basic principles of vocational education. Emphasis is placed upon the factors contributing to the nature, purpose, scope, organization, and administration of vocational education in agriculture. Special consideration is given to all areas of vocational training, the types of schools and trends. The student will be required to develop and defend his philosophy of vocational education. Credit 3(3-0).

608. Seminar in Agricultural Education

This course is designed for graduate students having a major in Agricultural Education. Only candidates for the advanced degrees are eligible to take the course which includes a review of current articles and books of interest to students in Agricultural Education. Credit 1(1-0).

AGRICULTURAL AND HOME ECONOMICS EXTENSION**141. Principles of Extension Education**

Background, development, and organization of the Agricultural and Home Economics Extension Service; principles underlying extension education; program building and techniques of teaching. Credit 3(3-0).

DEPARTMENT OF ANIMAL INDUSTRY

Courses in animal industry cover the study of beef cattle, dairy cattle, swine, poultry and their products; the management of herds, flocks and studs; feeding, breeding, general sanitation, hygiene and disease of livestock and poultry; and the chemical and physiological phases of animal nutrition.

The Department offers curricula leading to the degree of Bachelor of Science in (1) Animal Husbandry, (2) Dairy Husbandry, and (3) Poultry Husbandry.

The curricula are designed to equip men as owners and managers of general farms where livestock is handled, for the more specialized types of dairy and poultry farming, as instructors and investigators in animal industry and animal nutrition.

Students who wish to major in the Department should follow the Basic Curriculum in Agriculture for the freshman and sophomore years (see page 63). Programs for the junior and senior years should be planned in conference with the Head of the Department.

CURRICULUM IN ANIMAL HUSBANDRY

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Economics 122, 123, 131	3 (2-2)	3 (3-0)	5 (5-0)
Animal Husbandry 124, 131, 132	3 (2-2)	4 (2-4)	5 (3-4)
Zoology 142, 143	3 (3-0)	4 (2-4)	.....
Chemistry 121, 131	5 (2-6)	5 (3-4)	.....
Bacteriology 123 .....	.....	.....	5 (3-4)
Electives	3 ()	3 ()	3 ()
	<hr/>	<hr/>	<hr/>
	17	19	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Animal Husbandry 133, 144	3 (2-2)	.....	3 (1-4)
Animal Husbandry 501, 142	5 (5-0)	.....	4 (2-4)
English 224	3 (2-2)	.....	.....
Rural Sociology 131	3 (3-0)	.....	.....
Field Crops 131 .....	.....	3 (2-2)	.....
Soils 132 .....	.....	3 (3-0)	.....
Bacteriology 144 .....	.....	4 (2-4)	.....
Dairy Husbandry 134 .....	.....	3 (2-2)	.....
Agricultural Economics 141 .....	.....	.....	3 (2-2)
Animal Husbandry 135 .....	.....	.....	3 (3-0)
Electives	3 ()	3 ()	3 ()
	<hr/>	<hr/>	<hr/>
	17	16	16

ANIMAL HUSBANDRY

111. Breeds of Livestock

Breeds of farm animals with reference to their origin and development. Credit 3 (2-2).

122. Types and Market Classes of Livestock

The economic importance, classification and grading of cattle, sheep, swine, horses, and livestock products. Credit 3 (2-2).

124. Swine Production

The place of swine in the farm program; their selection, breeding, care and management. Credit 3 (2-2).

131. Anatomy and Physiology of Domestic Animals

Designed to acquaint students with gross structure and function of tissues, organs and systems of the animals. Credit 4 (2-4).

132. Livestock Feeding

Principle of feeding and the composition of feeds. Practice in formulating rations for the various classes of livestock. Credit 5(3-4).

133. Diseases of Farm Animals

The common diseases of livestock with reference to causes, prevention and treatment. Credit 3(2-2).

135. Beef Production

Breeds of beef cattle, their selection, care and management. Credit 3(3-0).

142 Farm Meats

Meat production from a market standpoint with laboratory work in the slaughtering, curing, and marketing of meat products. Credit 4(2-4).

144. Livestock Judging

Special training in points of selection of farm animals. Credit 3(1-4).

Advanced Undergraduates and Graduates**501. Animal Nutrition**

Metabolism of carbohydrates, fats, proteins and minerals. Net energy values and application to new theories of feeding. Credit 5(5-0).

DAIRY INDUSTRY**123. Principles of Dairying**

A study of dairy products. Credit 3(2-2).

134. Dairy Cattle and Milk Production

Breeds of dairy cattle, their development, care and management. Credit 3(2-2).

141. Dairy Management

Designs and construction of dairy buildings, problems of economical milk production, fitting and showing dairy cattle. Credit 3(1-4).

142. Market Milk

The market milk industry, milk ordinances, city milk supply, transportation, grading, pasteurizing, and bottling. Credit 3(2-2).

144. Ice Cream Making

The principles involved in the manufacturing of commercial ice cream and ices. Prerequisite: D. H. 123. Credit 3(1-4).

145. Dairy Technology

Theory of and practice in analytical methods used for control in dairy manufactures. Credit 4(2-4).

146. Dairy Plant Practice

Assigned practice work in the butter, milk and ice cream laboratories of the college creamery. Prerequisite: D. H. 144. Credit 2 to 6 hours.

CURRICULUM IN POULTRY HUSBANDRY

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Poultry Husbandry 131, 132, 122	3(2-2)	4(2-4)	3(2-2)
Chemistry 131, 132	5(3-4)	5(3-6)	.....
Zoology 142, 133	3(3-0)	.....	3(2-2)
Bacteriology 123	5(3-4)	.....	.....
Political Science 231 .....	.....	.....	5(5-0)
English 224 .....	.....	.....	3(2-2)
Electives	3()	8()	3()
	<hr/>	<hr/>	<hr/>
	19	17	17

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Poultry Husbandry 141, 142, 143	4(2-4)	3(3-0)	3(3-0)
Agricultural Economics 131	5(5-0)	.....	.....
Agronomy 124	3(2-2)	.....	.....
English 244	3(3-0)	.....	.....
Rural Sociology 131 .....	.....	3(3-0)	.....
Poultry Husbandry 502 .....	.....	2-3( )	.....
Agricultural Economics 141 .....	.....	.....	3(2-2)
Agricultural Engineering 124 .....	.....	.....	3(0-6)
Electives	3()	8()	8()
	<hr/>	<hr/>	<hr/>
	18	16-17	17

POULTRY HUSBANDRY

111. Principles of Poultry Husbandry

The industry, origin of breeds, classification, elements of production practices, selection and improvement. Credit 3(3-0).

112. Poultry Production

Feeding, housing, sanitation, parasites and disease control, and the economics of production. Credit 3(2-2).

122. Incubation and Brooding

Incubation and operation of various types of incubators and brooders. The chick, its care and management through the first four weeks; economics of hatchery operation. Credit 3(2-2).

123. Turkey Production Management

History, origin, development and management of the turkey flock. Credit 3(2-2).

131. Judging and Selection of Poultry

Standard and utility judging of fowls, selection and preparation of breeds for show purposes. Credit 3(2-2).

132. Poultry Feeds and Feeding

Poultry feeds, compounding rations, feeding standards for breeding, fattening, growing and production stock, feeding appliances and practices. Credit 4(2-4).

141. Disease and Parasites

Poultry hygiene and sanitation, nature and causes of diseases, relation of management to control of disease and parasites. Credit 4(2-4).

142. Poultry Farm Management

Principles of farm management as applied to poultry, selection of farm layouts, study of records, and factors influencing returns. Credit 3(3-0).

143. Marketing Poultry Products

Methods of killing, grading, storage and marketing poultry and poultry products. Credit 3(3-0).

Advanced Undergraduates and Graduates**502. Special Problems in Poultry Husbandry**

Problems in disease, nutrition, and breeding. Credit 2-3 hours.

DEPARTMENT OF ARCHITECTURAL ENGINEERING

The objective of the course in architectural engineering is to provide a sound training in subjects basic to the engineering design and construction of buildings.

In order that the students may acquire self-reliance, they are increasingly thrown upon their own resources as they advance from year to year.

In recognition of the many directions toward which an architectural education may guide students in this field, the Department of Architectural Engineering announces that electives in related work may be chosen by students of good standing with the approval of the Head of the Department in substituting of suggested electives.

The course of architectural engineering covers four years and leads to the degree of Bachelor of Science in Architectural Engineering.

Freshman Year

(See First Year's Curricula of Engineering, Page 72.)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Freehand Drawing 311, 313	3 (0-6)	.....	3 (0-6)
Arch. Perspective and Shades and Shadows, A.E. 324 .....	.....	3 (0-6)	.....
General Physics 321, 322, 323	5 (3-4)	5 (3-4)	5 (3-4)
Mathematics 321, 322, 323	5 (5-0)	5 (5-0)	5 (5-0)
Arch. Design, A.E. 321, 322, 323	4 (0-8)	4 (0-8)	4 (0-8)
Military or Air Science 221, 222, 223	2 (2-2)	2 (2-2)	2 (2-2)
Engineering Problems M.E. 318, 319	1 (0-2)	1 (0-2)	.....
	—	—	—
	20	20	19

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mechanics, M.E. 331, 332, 333	5 (5-0)	5 (5-0)	5 (5-0)
Arch. Design, A.E. 331, 332, 333	5 (0-10)	5 (0-10)	5 (0-10)
History of Arch., A.E. 325, 326, 327	4 (4-0)	4 (4-0)	4 (4-0)
Working Drawings, A.E. 334, 335, 336	3 (0-6)	3 (0-6)	3 (0-6)
Electives	3	3	3
	—	—	—
	20	20	20

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Theory of Structures A.E. 341, 342, 343 ...	5 (0-10)	5 (0-10)	5 (0-10)
Reinforced Concrete Design, A.E. 345 ....	.....	4 (4-0)	.....
Arch. Practice, A.E. 346	2 (4-0)	.....	.....
Surveying Math. 324 .....	.....	.....	3 (1-4)
Contracts and Specifications, M.E. 327 ....	.....	.....	3 (3-0)
Materials of Construction, I.A. 324	3 (3-0)	.....	.....
Heating and Ventilating, M.E. 334, 335	3 (3-0)	3 (3-0)	.....
Testing Materials, M.E. 346	2 (4-0)	.....	.....
Economics 231, 234 .....	.....	5 (5-0)	5 (5-0)
Electives	3	3	3
	—	—	—
	18	20	19

Note: The junior and senior electives may be taken in Advanced Military or Air Science or they may be made up on the basis of 6 credits of non-technical course work. Planning of the entire elective credits will be in consultation with the student's adviser.

Suggested Electives

Architectural Engineering 347, 348	French 211
Electrical Engineering 321	English 244
Mathematics 331	Commercial Law 335

COURSES IN ARCHITECTURAL ENGINEERING**321. Architectural Design**

The requirements and the solutions of problems for small residential buildings, emphasizing economy with the design of one and two bedroom units. Prerequisites: M.E. 312. Credit 4(0-8).

322. Architectural Design

Problems in the design of a series of small buildings emphasizing environmental influences, space organization, climate, orientation and materials and methods of construction. Prerequisite: A.E. 321. Credit 4(0-8).

323. Architectural Design

Residential design requiring the solutions of housing problems for special, more elaborate requirements, and for multiple uses. Prerequisite: A.E. 322. Credit 4(0-8).

324. Architectural Perspective and Shades and Shadows

Drafting principles of architectural perspective and methods of developing shades and shadows on architectural subjects. Prerequisite: M.E. 314. Credit 3(0-6).

325. History of Architecture (Formerly Art 324)

A study of Ancient and Classical Architecture including the Egyptian, Western Asiatic, Greek, Roman and Early Christian styles. Credit 4(4-0).

326. History of Architecture (Formerly Art 325)

A study of the Byzantine, Romanesque and Gothic Architectural styles. Prerequisite: A.E. 325. Credit 4(4-0).

327. History of Architecture (Formerly Art 326)

The Renaissance, Early American and Modern architectural styles. Prerequisite: A.E. 326. Credit 4(4-0).

331. Architectural Design

Continuation of design principles initiated in the sophomore year. Solutions to building problems from the requirements of many fields of activity, (education, recreation, religion, industry, etc.). The development of one small scale model of a completed design is included. Prerequisite: A.E. 323. Credit 5(0-10).

332. Architectural Design

Continuation of A.E. 331 and includes emphasis on interior design. Prerequisite: A.E. 331. Credit 5(0-10).

333. Architectural Design

The design of certain parts of larger buildings and studying the problems involved. At least one complete design is required for a larger building. Prerequisite: A.E. 332. Credit 5(0-10).

334. Architectural Working Drawings

Drafting room principles are emphasized. The complete working drawings for residences including plans, elevations, and a series of architectural details. Prerequisite: A.E. 323. Credit 3(0-6).

335. Architectural Working Drawings

The economical use of timber for building construction. The detailing of timber trusses, girders and laminated members. Complete working drawings for a heavy timber building including foundation and footing details. Prerequisite: A.E. 334. Credit 3(0-6).

336. Architectural Working Drawings

Continuation of A.E. 335: Concrete, masonry and steel construction details for fireproof and semi-fireproof buildings, including the development of structural sections, architectural plans, and elevations for larger buildings. Prerequisite: A.E. 335. Credit 3(0-6).

341. Theory of Structures (Formerly Lab. Work w/Indiv. Criticism)

The theory of stress analysis as it applies to building structures. Includes loadings, reactions, shears, moments, deflections, beam theory and design. Mathematical and graphical solutions are covered. Prerequisite: M.E. 333. Credit 5(0-10).

342. Theory of Structure (Formerly Lab. Work w/Indiv. Criticism)

Continuation of A.E. 341: Column theory and design, steel truss and plate girder design. Special beam and girder connections, truss deflections by methods of virtual work and Williot Mohr. Prerequisite: A.E. 341. Credit 5(0-10).

343. Theory of Structures (Formerly Lab. Work w/Indiv. Criticism)

Continuation of A.E. 342: The analysis of statically indeterminate portal frames and bents. Virtual work, angle change, slope deflection, and moment distribution methods are applied to the solution of indeterminate problems. Prerequisite: A.E. 342. Credit 5(0-10).

345. Reinforced Concrete Design

The theory and design of reinforced concrete members as applied to building structures. Includes the design of footings, beams, columns and slabs. Prerequisite: A.E. 341. Credit 4(4-0).

346. Architectural Practice

Procedures of the professional practice of architecture. Seminar. Prerequisite: Senior classification. Credit 2 (4-0).

347. Architectural Design

Elective for students with special interest in architectural design. Laboratory work with individual criticism. Prerequisite: A.E. 333. Credit 5 (0-10).

348. Architectural Design

Continuation of A.E. 347. Laboratory work with individual criticism. Prerequisite: A.E. 347. Credit 5 (0-10).

DEPARTMENT OF ART**GENERAL STATEMENT**

The objectives of this course are as follows:

- (a) To discover and develop the latent talent of students for artistic expression and lay a foundation for careers as creative artists.
- (b) To meet a growing demand for specially trained art teachers in public schools and colleges.
- (c) To develop tastes and discriminations in choice of materials used in everyday life which will find expression in more beautiful homes and gardens, schools, parks, playgrounds and other public works.
- (d) To provide a culture leading to a more worthy use of leisure time.

All students wishing to major in art must pass a special examination or submit some of their art work for appraisal. Students in other departments desiring special work in art may by arrangement with the instructor take any course listed under art.

CURRICULUM OF ART**Freshman Year**

(See First Year's Curricula of Engineering, Page 72.)

NOTE: Students majoring in Art will take History 213 during freshman year.

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English Elective .....	.....	.....	5(5-0)
French 214, 215	5(5-0)	5(5-0)	.....
Modern European History 211 or 212	5(5-0)	.....	.....
Freehand Drawing 311, 312, 313	3(0-6)	3(0-6)	3(0-6)
Art 314, 315, 316	2(2-0)	2(2-0)	2(2-0)
Military or Air Science 221, 222, 223	2(2-2)	2(2-2)	2(2-2)
Art 317, 318, 319 Color and Design	3(0-6)	3(0-6)	3(0-6)
Elective .....	.....	3	3
	20	18	18

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
American History 221 or 222	5(5-0)	.....	.....
Mediaeval History 232 .....	.....	5(5-0)	.....
Commercial Art 321, 322, 323	3(0-6)	3(0-6)	3(0-6)
Portrait, Art 334, 335, 336	2(0-4)	2(0-4)	2(0-4)
Art 327, 328, 329	2(2-0)	2(2-0)	2(2-0)
Ceramics 337, 338, 339	3(0-6)	3(0-6)	3(0-6)
Composition, Art 331, 332, 333	2(0-4)	2(0-4)	2(0-4)
Elective	3	3	5
	20	20	17

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
History 231	5(5-0)	.....	.....
Figure Drawing, Art 341, 342	3(0-6)	3(0-6)	.....
Oil Painting, Art 347, 348, 349	3(0-6)	3(0-6)	3(0-6)
Phy. Ed. 234 .....	.....	.....	5(5-0)
Electives	6	8	6
	17	14	14

Suggested Electives

History of Architecture 325, 326, 327.

Education 222, 231, 248, 251, 223, 237, or 238, 233, 224.

NOTE: The junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with the student's adviser.

311. Freehand Drawing

This course is a study of the fundamental principles of drawing. As a useful mode of visual expression selected problems involving basic considerations of line, mass and color are presented for analysis and laboratory practice. Credit 3(0-6).

312. Lettering and Poster Design

This course is a comprehensive study of the art of lettering with speedball pens, the principles of the layout, poster construction and general advertising. Credit 3(0-6).

313. Water-color Painting

This course aims to give a working knowledge of color both from the standpoint of its use and enjoyment—various theories of color are analyzed along with drills on the techniques of water-color painting. Credit 3(0-6). Prerequisite: 311.

314. Art Appreciation

This is an introductory course to the study of fine arts. Basic qualities of various forms of artistic expression are explained. Emphasis is placed on the application of art principles in everyday life. Credit 2(2-0).

315. History of Art

This course is a study of the art historic periods. Representative examples of the architecture and sculpture of ancient Egypt, Greece and Rome are selected for analysis, interpretations and comparisons. Credit 2(2-0).

316. History of Art

This course traces the development of the art of painting from the Italian Primitive through the English School by means of analysis and comparisons of works of representative painters. Credit 2(2-0).

317. Color and Design

This course deals with the theory of color and principals of pure design as applied in Textiles. The development of decorative motifs, all-over patterns, sources of design. Fall. Credit 3(1-5).

318. Intermediate Design

This course is a continuation of 317 with greater emphasis on the development of the student's creative ability. Introduction of block printing and stenciling. Credit 3(1-5). Prerequisite: Art 317.

319. Advanced Design

This course is a continuation of 318 with emphasis on applying basic principles to the production of industrial products work with looms, hand weaving, leather work and textile dyeing. Credit 3(0-6). Prerequisite: Art 318.

320. Figure Drawing

This course is a study of the human figure with emphasis on Anatomy, body structure and human proportions, draped and undraped figures at rest and in action. Spring. Credit 3(1-5).

321. Commercial Art

This is an advanced course in Freehand Drawing—with considerable emphasis on the techniques of mediums used in commercial art—laboratory drills in sketching and rendering in pen and ink and wash. Prerequisite: 313. Credit 3(0-6).

322. Commercial Art

This is a continuation of 321. In this course water color and show-card color are used with continued drills in laboratory techniques suitable for reproduction—cartooning. Prerequisite: 321. Credit 3(0-6).

323. Commercial Art

This course aims at guiding the student towards such specific branches of commercial art as book jacket designs—layouts for newspapers, designs for calendars, greeting cards, magazine illustrations, posters, etc. Prerequisite: 322. Credit 3(0-6).

327. Art Appreciation

This course is a study of the arts in America. Beginning with a study of the crafts and continuing through American Architecture, representative personalities and their works are studied, analyzed and interpreted. Credit 2(2-0).

328. History of Art

This course traces the development of the art of sculpture in America from the Revolutionary period to the present area. Credit 2(2-0).

329. History of Art

This course traces the development of the art of painting in America from the Revolutionary period to the present era. Emphasis is placed on analysis and interpretation of representative works. Credit 2(2-0).

331. Composition

This course is a study of the basic principles of pictorial composition or designing the picture with definite consideration of the requirements of commercial art, drills in abstract arrangements of dark and light. Credit 2(0-4).

332. Composition

This course is a continuation of 331 with emphasis on the study of accessories, figure arrangement and expression. Prerequisite: 331. Credit 2(0-4).

333. Composition

This course is a continuation of 332 with the introduction of a wide range of assigned topics or themes to be illustrated with original pictures. Emphasis is placed on originality, design, and expression. Credit 2(0-4).

334. Portrait

This course consists of drawing from the antique or cast drawing as a foundation for drawing from life. Basic considerations in modeling in full scale of values are studied and practiced: medium, charcoal. Credit 2(0-4).

335. Portrait

This course is a study of the techniques in the reproduction of photographs in charcoal and pastel. Emphasis on laboratory techniques. Prerequisite: 334. Credit 2(0-4).

336. Portrait

This course is a study of the technique of portraiture. Studies are made from living models with emphasis on composition and expression. Prerequisite: 335. Credit 2(0-4).

337. Elementary Ceramics

Art principles applied in the field of Ceramics. Study of the historical development, materials and processes, structural forms, simple exercises in modeling in clay. Supplementary reading and laboratory practice. Fall. Credit 3(1-5).

338. Ceramics

This is an intermediate course. Emphasis is placed on laboratory techniques, casting, approved practices and procedures. Winter. Credit 3(1-5). Prerequisite: Art 337.

339. Advanced Ceramics

Much attention is devoted to modern methods of production, building of Armatures and casting in plaster. Making of moulds, one piece, waste moulds and piece moulds, decorative processes in relation to glazing and firing. Creative thought is stimulated by composition of original designs and collecting and analysis of contemporary works. Prerequisite: 338. Credit 3(1-5).

341. Figure Drawing

This course is a study of the human figure from life. A study of the full length figure with emphasis on proportion, action and modeling in full values. Credit 3(0-6).

342. Figure Drawing

This course is a continuation of 341 with emphasis on laboratory techniques in drawing and painting from life. Credit 3(0-6).

347. Oil Painting

This course is an advanced study of oil painting. Emphasis is placed on the technique of oil painting, still life, landscapes and portrait. Credit 3(0-6).

348. Oil Painting

This course is a continuation of 347 with emphasis on the development of original themes. Prerequisite: 347. Credit 3(0-6).

349. Oil Painting

This course is a continuation of 348 with emphasis on originality of subjects and treatment. Prerequisite 348. Credit 3(0-6).

501. Public School Art

Study of materials, methods and procedures in teaching art in the Public Schools. Special emphasis on selection and organization of material—seasonal projects—the lesson plan and correlation—lectures demonstrations—assigned readings. Credit 3(3-0). Summer Quarter.

502. Junior and Senior High School Methods

Study of materials, methods and procedures in teaching art in Junior and Senior High Schools. Credit 3(3-0). Summer Quarter.

503. Seminar In Art History

Round table discussion with student reports. Prerequisite: Consent of the instructor. Credit 3(3-0).

504. Advanced Studio Techniques

Problems in laboratory, practices of interest to class are selected and studied.

- (a) Water color
- (b) Pastel
- (c) Oil Painting

DEPARTMENT OF BIOLOGY

The courses in the Biology Department are designed to serve the needs of the college as a whole in the area of biological sciences. In view of this concept, the courses are organized to provide the training necessary for specialization in agricultural sciences, home economics, conservation, horticulture and teaching of biology. The Department also offers courses required for entrance into graduate, medical, dental and veterinary schools.

A minimum of 45 quarter hours is required of students who plan to do their major work in biological sciences. These hours must be

selected from the following courses: Zoology 111, 112; Botany 111, 121; or 131; Zoology 123, 124, 132, 142, 143, 144, and electives from courses permitting major credit.

Required supporting courses for the majors are: General Chemistry 111, 112, 113; Organic Chemistry 131, 132; Physics 311, 312, and Mathematics 311, 312.

A minimum of 30 quarter hours is required of persons who minor in biological sciences. Persons who plan to do their minor in biology must meet the departmental requirements from the following courses: Zoology 111, 112; Botany 111, 121; Zoology 123, 143, 144.

Students planning a vocation in teaching, but whose major emphasis is in biology, should consult the Head of the Department before registering.

MAJOR IN BIOLOGICAL SCIENCE

Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Zoology 111, 112	5 (3-4)	5 (3-4)	.....
Botany 111 .....	.....	.....	5 (3-4)
English 211, 212, 213	5 (5-0)	5 (5-0)	5 (5-0)
Math. 311, 312	5 (5-0)	5 (5-0)	.....
History 210 .....	.....	.....	5 (5-0)
Education 211	1 (1-0)	.....	.....
R.O.T.C. 211, 212, 213	2 (2-2)	2 (2-2)	2 (2-2)
Phy. Ed. 210a, 210b, 210c	1 (0-2)	1 (0-2)	1 (0-2)
	<hr/>	<hr/>	<hr/>
	19	18	18

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Bot. 121	3 (2-2)	.....	.....
Zool. 123 .....	.....	5 (3-4)	.....
Intro. Ed. 222 .....	.....	.....	3 (3-0)
Physics 311, 312	5 (4-2)	5 (4-2)	.....
History 221 or 222 .....	.....	.....	5 (5-0)
Chem. 111, 112, 113	5 (3-4)	5 (3-4)	5 (3-4)
R.O.T.C. 221, 222, 223	2 (2-2)	2 (2-2)	2 (2-2)
Art 314, 315, 316	2 (2-0)	2 (2-0)	2 (2-0)
Phy. Ed. 220a	1 (0-2)	.....	.....
	<hr/>	<hr/>	<hr/>
	18	19	17

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Zool. 132	5(3-4)	.....	.....
Zool. 142 .....	.....	3(3-0)	.....
Zool. 124 .....	.....	.....	4(2-4)
French 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Chem. 131, 132	5(3-4)	5(3-4)	.....
Eng. 220 or 223 .....	.....	.....	5(5-0)
Phy. Ed. 220b, 220c .....	.....	1(0-2)	1(0-2)
Minor or Electives	3()	5()	3()
	<hr/>	<hr/>	<hr/>
	18	19	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Zool. 143, 144 .....	.....	4(2-4)	4(2-4)
*Elective in Major Field	3(3-0)	.....	.....
Gen. Psy. 221 .....	.....	5(5-0)	.....
Principles of Soc. 231	5(5-0)	.....	.....
History 213	5(5-0)	.....	.....
Research 246 .....	.....	3(3-0)	.....
Minor or Electives	5()	3()	10()
	<hr/>	<hr/>	<hr/>
	18	15	14

BACTERIOLOGY**123. General Bacteriology**

A general course designed to study the morphology, physiology, and taxonomy of bacteria as well as the activity they play in some of the processes encountered in everyday life. A prerequisite to all other courses offered in bacteriology. Credit 5(3-4).

134. Food Bacteriology

This course is designed to study the role of microorganisms in the preparation, preservation, and decomposition of various food products. Some consideration is given to the Public Health problem regarding the spread of some diseases from contaminated foods. Credit 4(2-4).

144. Dairy Bacteriology

A general course which considers some of the common organisms associated with normal, and abnormal fermentations of milk. The role of microorganisms in the production and decomposition of various dairy products is also considered. Credit 4(2-4).

*Course to be decided by Head of the Department.

145. Soil Bacteriology

This course is designed to study the role of microorganism in soil fertility. Special emphasis is placed on the activity of the nitrogen-fixing bacteria and also those concerned in the decomposition of organic waste materials. Credit 4(2-4).

BOTANY**111. General Botany**

Plants as living organisms constituting an integrated part of man's environment. General plant structure, general classification, evolutionary tendencies and living processes. Credit 5(3-4).

112. Plant Taxonomy

The systematic organization of the plant kingdom. Emphasis on identification and classification of important plant *genera* and families. Credit 5(3-4).

121. Elementary Plant Physiology

The relationship between plant structure and various physiological processes. A general consideration of absorption, nutrition, respiration, growth and reproduction. Credit 3(2-2).

131. Plant Physiology

An analysis of complex living processes occurring in plants and an attempt to explain them in terms of chemistry and physics. Credit 4(2-4).

133. Plant Pathology

Basic factors governing the development of plant diseases including host-parasite relationships, effect of environment on disease development and the nature of disease resistance. Credit 3(2-2).

141. Cytology

The structure and functional organization of protoplasm and its relationship to metabolism, heredity and evolution. Credit 3(1-4).

Advanced Undergraduates and Graduates**504. Special Problems in Botany**

Open to advanced students in botany for investigation of specific problems. Credit 2 to 5 hours.

GENERAL SCIENCE**131. The Physical Sciences**

Brief review of the basic concepts of astronomy, geology, meteorology, physics and chemistry. Credit 5(4-2).

132. The Biological Sciences

Brief review of general biology, anatomy, physiology, and ecology. Credit 5 (4-2).

ZOOLOGY**111. General Zoology**

This course is designed to give the student a general concept of the basic principles of Zoology and a brief survey of the animal kingdom. Various areas of animal biology are studied, including cellular organization, classification, morphology, and physiology of representative forms from the protozoa through the phylum arthropoda. Ecological relationship of organisms is stressed. Credit 5 (3-4).

112. General Zoology

This course treats comparatively with representative Mollusca, Echinoderms, and the chordates, and gives the more fundamental training required of Biological Science majors. It is required of all majors with their concentration in zoology. Prerequisite: Zoology 111 or its equivalent. Credit 5 (3-4).

121. Human Anatomy and Physiology

This course is designed to scientifically inform the student of the general structure and function of the organ systems of man. The laboratory work shall consist of the dissection of the foetal pig and a study of the human skeleton. This course is required of Home Economics majors. Credit 5 (3-4).

122. Invertebrate Zoology

A comprehensive consideration of the morphology, function, phylogeny, classification and the life histories of representative forms of lower and higher invertebrate groups exclusive of insects. Prerequisites: Zoology 111, 112. Credit 5 (3-4).

123. Comparative Anatomy of the Vertebrate

A comparative study of chordate organ systems with rather detailed emphasis on the primitive vertebrates, the dogfish and Necturus. A study is also made of the turtle as a representative reptile. Prerequisite: Zoology 112. Credit 5 (3-4).

124. Mammalian Anatomy

Lectures and detailed laboratory dissections on the cat, dog, foetal sheep and other related mammals as a basis for an understanding of human anatomy. Special emphasis is placed on the study of the myology and osteology of the fore and hind limbs to illustrate fundamental principles of structure and function. Prerequisite: Zoology 123. Credit 4 (2-4).

131. Human Anatomy

This course is presented through lectures, demonstrations and the laboratory study of manikins and the human skeleton. Organ systems of such mammals as the cat and pig are dissected and compared with conditions as they exist in man. Open to biology majors as an elective only. Prerequisite: Zoology 111. Credit 5(3-4).

132. Histology

This course will consist of an intensive study of the cell and cellular organization of the tissues and organs of various animals. Prerequisite: Zoology 112 or its equivalent. Credit 5(3-4).

133. Entomology

Morphology, identification and classification of insects; economic importance of insects. Credit 3(2-2).

141. Human Physiology

This course is presented through lectures and laboratory demonstrations of certain organ activity of common laboratory animals. This introductory course correlates these physiological principles with the performance of the integrated organ systems of the human. Prerequisite: Zoology 131. Credit 5(5-0).

142. Genetics

Principles and mechanism of inheritance in plants and animals. Credit 3(3-0).

143. Vertebrate Embryology

A study of the developmental stages of selected vertebrates. The materials are treated comparatively and consist of amphibian, bird, rodent, and references to mammalian forms. Prerequisite: Zoology 123 or special consent of instructor. Credit 4(2-4).

144. Vertebrate Embryology

This course will be utilized in part for stressing variations in rodent and mammalian development and for applications of experimental embryological procedures. Prerequisite: Zoology 143. Credit 4(2-4).

Advanced Undergraduates and Graduates**501. Special Problems in Zoology**

Open to students qualified to do research in Zoology. Credit 2 to 3 hours per quarter. Maximum 6 credit hours.

502. Mammalian Biology

The study of the evolutionary history, classification, adaptation and variation of representative mammals with special emphasis on the prenatal variations in prototherian, metatherian and eutherian types. Prerequisites: Zoology 111 and Botany 111. Credit 3(2-2).

503. Biology of Sex

Lectures on the origin and development of the germ cells and *gonads* in selected animal types. The evolution of sexuality and sex in protozoans, lower metazoans and vertebrates are discussed. Some consideration is made of the influences of endocrine secretions in altering the normal sex ratio in certain undifferentiated races of amphibians. Prerequisites: Zoology 111, 112 or equivalent. Credit 3(3-0).

504. Cytology

An intensive study of the cell with lectures and periodic student reports on modern advances in cellular biology. Prerequisite: 132 or special consent of instructor. Credit 3(3-0).

505. General Microtechnique

This course is designed to develop skills in the preparation of cells, tissues and organs for microscopic observation and study. Prerequisites: Zoology 111, 112 or equivalent. Credit 4(2-4).

506. Nature Study

A study of diversified organisms, their habits, life histories, defenses, sex relationships, periodic activities and economic values is made to acquaint the student with fundamental knowledge that should lead to a fuller appreciation of nature. Credit 3(3-0).

507. General Parasitology

This course covers the general principles of parasitology including morphology, taxonomy, life histories, host-parasite relationships, and epidemiology. Course recommended for students preparing for related areas in agricultural science, medicine, or advance work in zoology. Prerequisite: Zoology 112. Credit 5(3-4).

DEPARTMENT OF BUSINESS

During the first two years the student is expected to lay a broad foundation for later specialization. To secure this end the courses in the freshman and sophomore years have been so selected and grouped as to cover some of the major fields of knowledge pertinent to business.

The Department of Business offers three curricula with variations which make it possible for students to prepare for various kinds of business and teaching positions.

GRADUATION REQUIREMENTS

Candidates for the B.S. degree must complete at least 200 hours of work approved by the Dean including work done in general education.

In order that graduates of the Department of Business may have specialized, as well as, broad training, the work is organized under three major departments as follows: (a) Business Administration, (b) Accounting, and (2) Commercial Education.

REQUIRED COURSES FOR FRESHMEN AND SOPHOMORES

English 211, 212, 213	15
Speech, English 224	3
Mathematics 311, 312, 315	15
Music and Art Appreciation (Comm. Ed.)	9
Music and Art Appreciation (B.A. and Acct.)	6
Physical Education	6
Chemistry 111, 112 or Physics 311, 312	10
Comm. Ed. 317, 318, 319	6
History 213, 221 or 222	10
Economics, Ec. 231, 232‡	10
Business Correspondence, B.A. 339	5
Acct. 321, 322, 323 (majors only, Soph. yr.)	15
Electives*	12

Students will choose electives to complete a minimum 18-hour schedule for each quarter.

ACCOUNTING

The following is suggested for those desiring to complete a major in accounting.

This major is recommended for those contemplating a career in accounting or graduate work in this specialized field.

Junior Year

Course and No.	Fall	Winter	Spring
Business Management, B.A. 351 .....	.....	.....	5 (5-0)
Intermediate Accounting, Acct. 331, 332	5 (5-0)	5 (5-0)	.....
Accounting Systems, Accounting 334 .....	.....	.....	5 (5-0)
Statistics, Math. 318 .....	.....	5 (5-0)	.....
Sociology, Soc. 231	5 (5-0)	.....	.....
Personnel Administration, B.A. 353 .....	.....	.....	5 (5-0)
Economics 231, 232	5 (5-0)	5 (5-0)	.....
Electives	3	3	3
	18	18	18

‡This course will be taken by Accounting Majors during their Junior year.

*Men students registering for a major in the Department must satisfy the Military or Air Science requirements.

	Senior Year	Fall	Winter	Spring
<i>Course and No.</i>				
Principles of Retailing, B.A. 346			5 (5-0)	.....
Commercial Law, B.A. 335		5 (5-0)	.....	.....
Principles of Real Estate, B.A. 357		5 (5-0)	.....	.....
Insurance, B.A. 356			5 (5-0)	.....
Principles of Salesmanship, B.A. 337				5 (5-0)
Governmental Accounting 335				5 (5-0)
Advanced Accounting, Accounting 341		5 (5-0)		.....
Federal Tax Accounting, Accounting 342			5 (5-0)	.....
Auditing, Accounting 343				5 (5-0)
Electives		3	3	3
		<hr/> 18	<hr/> 18	<hr/> 18

MAJOR IN BUSINESS ADMINISTRATION

The following is suggested for those desiring to complete a major in the field of business administration.

This major is recommended for those planning to enter one of the practical fields of trade or industry as administrators or office workers.

	Junior Year	Fall	Winter	Spring
<i>Course and No.</i>				
Business Management, B.A. 351		5 (5-0)	.....	.....
Principles of Retailing, B.A. 346				5 (5-0)
Accounting 321, 322		5 (5-0)	5 (5-0)	.....
Cost Accounting 323				5 (5-0)
Statistics, Math. 318			5 (5-0)	.....
Sociology, Soc. 231		5 (5-0)		.....
Advertising, B.A. 345			5 (5-0)	.....
Economics 233				5 (5-0)
Electives		3	3	3
		<hr/> 18	<hr/> 18	<hr/> 18

	Senior Year	Fall	Winter	Spring
<i>Course and No.</i>				
Office Management, B.A. 352			5 (5-0)	.....
Personnel Administration, B.A. 353				5 (5-0)
Commercial Law, B.A. 335		5 (5-0)	.....	.....
Principles of Real Estate, B.A. 357		5 (5-0)	.....	.....
Insurance, B.A. 356			5 (5-0)	.....
Principles of Salesmanship, B.A. 337				5 (5-0)
Labor Problems, Ec. 234				5 (5-0)
Accounting 342		5 (5-0)	.....	.....
Electives		3	7	3
		<hr/> 18	<hr/> 17	<hr/> 18

NOTE: The junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with the student's adviser.

Suggested Electives

General Psychology	Eng. 244, 231
Accounting	Ec. 254
Education to satisfy certification requirements	

MAJOR IN COMMERCIAL EDUCATION

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Principles of Retailing, B.A. 346 .....	.....	.....	5(5-0)
Accounting, Acct. 321, 322	5(5-0)	5(5-0)	.....
Shorthand, C. Ed. 314, 315, 316	5(5-0)	5(5-0)	5(5-0)
Mathematical Statistics, Math. 318 .....	.....	.....	5(5-0)
Adolescent Psychology, Ed. 223	3(2-2)	.....	.....
Educational Psychology, Ed. 231 .....	.....	3(3-0)	.....
Educational Philosophy, Ed. 224 .....	.....	3(3-0)	.....
Introduction to Education, Ed. 222	3(3-0)	.....	.....
Electives*	3(3-0)	3(3-0)	3(3-0)
	19	19	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Office Management, B.A. 352 .....	.....	5(5-0)	.....
Commercial Law, B.A. 335	5(5-0)	.....	.....
Secretarial Studies, C. Ed. 323 .....	.....	6(2-8)	.....
Advanced Stenography, C. Ed. 322a, b	5(2-6)	.....	.....
Office Training, C. Ed. 321a, 321b	2(2-0)	.....	6(0-13)
Office Appliances, C. Ed. 324 .....	.....	2(0-4)	.....
Principles of Secondary Education, Ed. 237	3(3-0)	.....	.....
Evaluation and Measurement, Ed. 236 .....	.....	3(2-2)	.....
Electives*	5(5-0)	5(5-0)	5(5-0)
	20	21	11

Suggested Electives*

Education 250, Methods of Teaching Business Subjects.

Education 251, Observation and Practice Teaching.

Phy. Ed. 234, Personnel and Community Health.

*These electives should be included by persons wishing to be certified to teach in the State of North Carolina.

NOTE: The junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with the student's adviser.

**SUGGESTED PROGRAM FOR SECRETARIES
AND STENOGRAPHERS**

Two-Year Course

Eng. 211, 212, 213	15 hrs.
Math. 311, 312, 315	15 hrs.
C. Ed. 314, 315, 316	15 hrs.
C. Ed. 317, 318, 319	6 hrs.
C. Ed. 321, 322, 323	19 hrs.
B.A. 339	5 hrs.
Phys. Ed.	6 hrs.
B.A. 352	5 hrs.
Electives	15 hrs.

This course is carefully planned for the purpose of training prospective candidates for various stenographic, typing, and clerical positions. Under immediate supervision students are trained to do simple routine work requiring care and accuracy in details. Special attention will be given to instruction in preparation for Civil Service examinations.

**COURSES IN ACCOUNTING, BUSINESS ADMINISTRATION AND
COMMERCIAL EDUCATION**

Courses in Accounting

321. Introductory Accounting (Formerly B.A. 332)

A study of the fundamental principles of accounting, embracing the theory of double-entry system recording and its application to business transactions through the complete accounting cycle. Credit 5(5-0).

322. Introductory Accounting (Formerly B.A. 333)

Continuation of Accounting 321. Emphasis is placed on accounting techniques as they apply to proprietorships, partnerships, and corporations. Also, an introduction is given to special corporate accounts, manufacturing and departmental operations. Prerequisite: Accounting 321. Credit 5(5-0).

323. Cost Accounting (Formerly B.A. 341)

A study of the elements and principles of cost accounting as applied to job lot, process, and standard costs systems. Emphasis is placed on accounts as a means of managerial control. Prerequisite: Accounting 321, 322. Credit 5(5-0).

331. Intermediate Accounting (Formerly B.A. 334)

This course gives advanced training in the theory of accounts, recording of accounting data, and preparation of accounting statements. Prerequisite: Accounting 321, 322, 323. Credit 5(5-0).

332. Intermediate Accounting

Continuation of Accounting 331 with emphasis on analysis and interpretation of accounting data. Prerequisite: Accounting 331. Credit 5(5-0).

334. Accounting Systems

A study of accounting features peculiar to various businesses, contractors, department stores, loan companies and associations, banks, insurance companies, brokerage firms, and utilities. Prerequisite: Accounting 321, 322, 323. Credit 5(5-0).

335. Governmental Accounting

Accounting for institutional and governmental units. Financial administration of funds, appropriations and budgets. Prerequisite: Accounting 321, 322, 323. Credit 5(5-0).

341. Advanced Accounting

Special advanced training in accounting techniques utilized in partnership accounting, special sales procedures, consolidations, fiduciary and budgetary accounting, and actuarial science. Prerequisite: Accounting 331, 332. Credit 5(5-0).

342. Federal Tax Accounting

A study of Federal income tax laws in relation to accounting and the preparation of tax returns for individuals and corporations. Prerequisite: Accounting 321, 322, 323. Credit 5(5-0).

343. Auditing (Formerly B.A. 343)

The legal responsibilities, the principles, and the practical procedure in the conduct of an audit and making an audit report. Prerequisite: Accounting 341 or concurrent enrollment therein. Credit 5(5-0).

Courses in Business Administration**335. Commercial Law**

Sales of personal property, bailment, common carriers, agency, master and servant, partnership, contracts, corporation, insurance, landlord and tenant, etc. Credit 5(5-0).

337. Principles of Salesmanship

This course is based upon actual experience of men successful in the field of salesmanship. It develops the subject from sound economics, philosophical, and psychological points of view. Economics of salesmanship is presented so that the student may see where the work performed is justifiable and necessary in the economic regime. The course includes psychology so that the student may more readily adjust himself to actual sales conditions and learn why some men and ideas succeed while others fail. Credit 5(5-0).

339. Business Correspondence

This course makes a thorough and practical analysis of all forms of business letters and gives constructive information on how to write letters that convince, whether they be sales letters, follow-up letters, form letters, complaints, collection and application letters. This course is required of all students in Business. Prerequisites: Eng. 211, 212; C. Ed. 318. Credit 5(5-0).

345. Advertising

This is a study of the techniques used in the preparation of advertising copy and the part advertising plays in business; advertising campaigns, budgets, and media. Credit 5(5-0).

346. Principles of Retailing

This course aims to cover the high points in the retail process of marketing as it is applied especially to the small independent store. Modern grocery and other smaller stores will be used as examples. Detailed studies will be made of store management, finance, and control, and marketing. Credit 5(5-0).

351. Business Management

Business Management covers the fundamentals of industrial organization and operation and helps the student to gain that basic knowledge of business which should be part of the equipment of every businessman. Credit 5(5-0).

352. Office Management

This course covers the principles and methods employed in departmental and centralized offices. Special attention is given to office layout, office system, equipment, selecting workers and general office service. Credit 5(5-0).

353. Personnel Administration

This is a comprehensive course dealing with the principles and practices in the administration of employees of commercial and industrial establishments. This course is very practical, giving the student a view of personnel as the businessman sees it. Credit 5(5-0).

356. Insurance

This course is a survey in a general way of the whole field of insurance. It deals with the nature and statistical basis of different kinds of insurance as property insurance, straight life, endowment, accident, industrial, old age, fire, livestock, etc. The function of publicity and the need of educating the public in the principles and services of insurance receive much attention. Credit 5(5-0).

357. Principles of Real Estate

This course deals with real estate as a profession, classes of property—suburban, apartment, industrial, farm and resort—rentals, leasing, the work of the brokers, property management and financing. Credit 5(5-0).

COURSES IN COMMERCIAL EDUCATION**314. Shorthand**

This course includes a study of wordbuilding and the general principles outlined in the Gregg Shorthand manual (simplified) and speed studies. Prerequisite: Eng. 210. Credit 5(5-0).

315. Shorthand

This course is a continuation of 314 and with added emphasis on transcription of simple letters and documents. Prerequisite: 314. Credit 5(5-0).

316. Shorthand

The principles are included early in this course and emphasis is placed on difficult dictation and transcription, speed tests and reporting speeches. Prerequisite: 315. Credit 5(5-0).

317. Typewriting

The typewriting course covers a working knowledge of the use of all parts of the typewriter, a thorough command of the keyboard by means of the touch system, rhythmic drills, practice in writing words, etc. Credit 2(0-5).

318. Typewriting

This course is concerned with tests and drills for speed and accuracy in the transcription of easy material from printed matter. Prerequisite: 317. Credit 2(0-5).

319. Typewriting

Technical typewriting is emphasized in this course by allowing the student to spend most of his time on tabulation, stencil cutting, report making and other practical duties. Prerequisite: 318. Credit 2(0-5).

321a, 321b. Office Training

Students will be required to do 13 hours practice work per week in the offices and plants of the College and in and around Greensboro for a period of one quarter. A study is also made of the executive work connected with offices of many types. Two hours each week are devoted to discussion of the various problems found in these offices. Prerequisite: C. Ed. 232. Credit 8(2-13). Credit, lecture alone, 2(2-0). Laboratory alone, 6(0-13).

322a, 322b. Advanced Stenography and Typing

This course is an intensive review of techniques in typing and shorthand for the purpose of developing speed. Emphasis is placed on the advanced rates of typing to meet job requirements, advanced dictation take rates and transcription rates. Two hours each week are devoted to speed and production typing and three hours each week to speed-building in shorthand and transcription. Minimum rates for course

credit are 60 w.p.m. in typing and 100 w.p.m. in shorthand. The rates attained in the course will be recorded on the student's permanent record. Prerequisites: Com. Ed. 316, 319. Credit 5(2-6). Credit 322a 2(2-0); 322b 3(0-6).

323. Secretarial Studies

This course deals with the qualification, duties, responsibilities and work of a secretary. The other points considered are: Managing callers, handling correspondence, locating sources of information, making appointments, and other routine and special duties in systematizing the office. Prerequisite: C. Ed. 316, 319, 322. Eng. 213. Credit 6(2-8).

324. Office Appliances

The purpose of the course is to give the student a general working knowledge of the leading office machinery and equipment. Students will be instructed in the use of adding, calculating, duplicating, name and data writing, billing, miscellaneous labor-saving and bookkeeping machines. This course can be given any quarter at the discretion of the instructor. Prerequisite: C. Ed. 319. Credit 2(0-4).

DEPARTMENT OF CHEMISTRY

The Department of Chemistry offers courses required in the various curricula of the college. For the most part the courses are made up of subject matter that is organized in step-wise sequence and students should therefore take the courses in this order.

A minimum of 55 quarter hours, including general chemistry, is required for a major in chemistry. Additional requirements in related courses include 10 quarter hours in general physics, and mathematics through integral calculus.

For a major in biochemistry a minimum of 35 quarter hours in chemistry, including physical chemistry and an additional 25 quarter hours consisting of biochemistry, plant physiology and animal nutrition are required.

A student who elects chemistry as his major should plan his program for the junior and senior years in conference with the Head of the Chemistry Department.

CURRICULUM IN CHEMISTRY

Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113	5(3-4)	5(3-4)	5(3-4)
English 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Math. 311, 312, 313	5(5-0)	5(5-0)	5(5-0)
Education 211	1(1-0)	.....	.....
Military or Air Science 211, 212, 213	2(1-2)	2(1-2)	2(1-2)
Physical Education 210a, 210b, 210c	1(0-2)	1(0-2)	1(0-2)
	<hr/>	<hr/>	<hr/>
	19	18	18

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 121, 122, 123	4(2-6)	4(2-6)	4(2-6)
Math. 321, 322, 323	5(5-0)	5(5-0)	5(5-0)
English 220 or 223	5(5-0)	.....	.....
Botany 111 .....	.....	5(3-4)	.....
Zoology 111 .....	.....	.....	5(3-4)
Military Science 221, 222, 223	2(1-2)	2(1-2)	2(1-2)
Physical Education 220a, 220b, 220c	1(0-2)	1(0-2)	1(0-2)
	<hr/>	<hr/>	<hr/>
	17	17	17

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 131, 132, 133	5(3-6)	5(3-6)	5(3-6)
Physics 321, 322, 323	5(4-2)	5(4-2)	5(4-2)
French 211, 212, 213	5(5-0)	5(5-0)	5(5-0)
Electives in Minor	3()	3()	3()
	<hr/>	<hr/>	<hr/>
	18	18	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 141, 142, 143	5(3-6)	5(3-6)	5(3-6)
Chemistry 145	5(3-4)	.....	.....
Electives	8()	11()	11()
	<hr/>	<hr/>	<hr/>
	18	16	16

NOTE:

1. It is suggested that chemistry majors choose as a minor either mathematics or physics.
2. Students may enroll for either Chemistry 121 or 131 after satisfactory completion of Chemistry 113.

BIOCHEMISTRY**134. Elementary Biochemistry**

Introductory organic chemistry with application to plant and animal life. Prerequisite: Chem. 131. Credit 5 (3-6).

135. Physiological Chemistry

Composition and action of special vitamins, hormones, enzymes and minerals in metabolism. Designed especially for foods and nutrition majors and pre-medical students. Prerequisite: Biochem. 134, or permission of instructor. Credit 5 (2-6).

147. General Biochemistry

Brief review of the literature and history of biochemistry; colloidal chemistry of biological materials; hydrogen concentration; the chemical composition of plants and animals with special reference to lipids, carbohydrates, proteins and enzymes. Prerequisite: Biochem. 135. Credit 5 (5-0).

148. Official Methods of Analysis

Methods used in chemical analysis of foods and feeds as set forth by the Association of Official Agricultural Chemists. Chemistry of the methods, and interpretation of the results of analysis of cereal foods, milk products and animal feeds. Prerequisite: Chem. 133 and Biochem. 147. Credit 5 (2-6).

Graduates and Advanced Undergraduates**505. Special Problems in Biochemistry**

Problems in either plant or animal nutrition. Development of procedures and methods for isolation and synthesis of naturally occurring plant or animal constituents. Credit 2 to 6 hours.

506. Plant Biochemistry

Chemical composition of plants; methods of detailed analysis of active constituents of fresh and dried plant materials. Prerequisite: Biochemistry 148. Credit 5 (2-6).

CHEMISTRY**111. General Chemistry**

Introduction to fundamental laws of matter that govern physical and chemical changes; classification of matter, a study of oxygen, hydrogen, simple compounds, nomenclature, atomic and molecular theories; valence. Credit 5 (3-4).

112. General Chemistry

Properties, reactions and uses of important non-metallic elements; atomic structure, periodic functions and classification of elements; radioactivity, solutions and electrolytes. Prerequisite: Chemistry 111. Credit 5(3-4).

113. General Chemistry

Metals, metallurgy, properties and uses; metallic ions in solution and arrangement in groups: ionic equilibrium, oxidation-reduction reactions. Prerequisite: Chemistry 111 and 112. Credit 5(3-4).

121. Semimicro Qualitative Analysis

Fundamental principles of analysis; preliminary experiences given to illustrate chemical principles; practice in equation writing, and interpretation of experimental results. Slags and alloys of unknown composition are analyzed. Prerequisite: Chem. 111 and 112. Credit 4(2-6).

122. Quantitative Analysis

Volumetric methods of analysis, placing emphasis upon physiochemical principles. Prerequisite: Chem. 121. Credit 4(2-6).

123. Quantitative Analysis

A gravimetric analysis. Prerequisite: Chem. 122. Winter. Credit 4(2-6).

131. Organic Chemistry

Introduction to carbon chemistry; a study of aliphatic compounds, saturated and unsaturated; nomenclature and simple synthesis. Fall. Credit 5(3-4).

132. Organic Chemistry

Aromatic compounds. Prerequisite: Chem. 131. Winter. Credit 5(3-6).

133. Advanced Organic Chemistry

Systematic identification of organic compounds with reference to the limitation of organic test reagents. Prerequisite: Chem. 131 and 132. Credit 5(3-6).

141. Physical Chemistry

Physical and theoretical aspects of chemistry dealing with atomic and molecular concepts of matter, the properties of gases, liquids and solids. Prerequisite: Physics 323, Math. 321 and 322. Credit 5(3-6).

142. Physical Chemistry

First and second laws of thermodynamics, thermochemistry, free energy, entropy, chemical equilibrium and phase equilibrium. Prerequisite: Chem. 141. Credit 5(3-6).

143. Physical Chemistry

Kinetics of chemical reactions, electromotive force, conductance, surface chemistry and colloids. Prerequisite: Chem. 142. Credit 5(1-4).

145. Introduction to Chemical Research

Designed to train students in the use of library and laboratory facilities. Required of all majors in chemistry. Prerequisite: Advanced standing in chemistry. Credit 5(1-4).

146. Chemical Engineering

Thermal properties of matter and energy relationships underlying chemical and physical processes; the first law of thermodynamics as applied to batch and flow processes, combustion, thermal control, etc. Prerequisite: Chem. 141, and Math. 321. Credit 4(4-0).

Advanced Undergraduates and Graduates**501. Chemical Literature Study**

Familiarization and uses of chemical periodicals, abstracts, dictionaries and research journals, introducing techniques used in research. Prerequisite: Chem. 131 and 132. Fall and Spring. Credit 2(1-2).

502. Minor Research Problems

Designed to familiarize students with library and library facilities in conducting a research problem. The problem may be selected in the area of chemistry of interest to the student. Registration only by permission of the instructor. Credit 3-6 hours.

DEPARTMENT OF EDUCATION**PROFESSIONAL REQUIREMENTS FOR TEACHERS CERTIFICATES**

The North Carolina Department of Public Instruction establishes requirements for certification in the public schools of the State and persons desiring to qualify for a teacher's certificate should familiarize themselves with the state department requirements which are subject to change from time to time.

The College cannot and does not set up state department certification requirements but it can advise and cooperate with students in planning their course of study so as to include the necessary professional courses. In order to avoid unnecessary delay and inconvenience, students interested in meeting these requirements should make applications to the head of the department of education in their sophomore year.

The professional education courses required for persons desiring a state teacher's certificate are designed to provide understanding, knowledges, skills and experiences which relate to the art and science of teaching. The professional courses in education are organized around three areas: The pupil; the school; and method, observation, and practice teaching. The student who desires to meet the requirements for teacher certification in the high schools of North Carolina should complete a minimum of nine quarter hours in each of these areas. The stu-

dent is required to complete the minimum requirements in the areas "The Pupil" and "The School" before he is eligible for credit in Methods, Observation and Practice Teaching, unless special permission is granted by the dean of the school in which the student is enrolled.

NOTE: State teachers' certificates are not issued by the College, but by the State Department of Public Instruction. Persons interested in securing a certificate to teach in the Public Schools of this State should contact the Division of Certification, State Department of Public Instruction, Raleigh, North Carolina, immediately after graduation. Certificates are issued only to persons who have graduated from a standard class "A" college and who have had the necessary professional courses.

The following are courses in each of the three major areas required in Professional Education:

THE PUPIL

Adolescent Psychology, Ed. 223	3 (2-2)
Educational Psychology, Ed. 231	3 (3-0)
Introduction to Guidance, Ed. 233	3 (2-2)
Tests and Measurements, Ed. 236	3 (2-2)
Electives: Field-Laboratory Experiences in Education, Ed. 234 ..	3 (½-3)
Mental Hygiene, Ed. 226	5 (5-0)

THE SCHOOL

Introduction to the Study of Education, Ed. 222	3 (3-0)
Philosophy of Education, Ed. 224	3 (3-0)
Principles of Secondary Education, Ed. 237	3 (3-0)
*Vocational Education, I.Ed. 331	3 (3-0)
*Vocational Guidance, I.Ed. 332	3 (3-0)

METHODS, OBSERVATION AND DIRECTED TEACHING

Materials and Methods of Teaching, Ed. 243, 245, 246, 247, 248, 249, 250	5 (5-0)
(The particular methods course to be pursued by the student will be determined by his or her major or minor subject)	
Directed Teaching, Ed. 251	5 (2-6)

Those desiring to pursue professional courses in teaching will be required to undergo counseling for the purpose of determining their capacity for profiting from the professional curriculum. After successful completion of one or two courses in professional education, students desiring teacher certification will be required to file a formal application in writing with the dean of their respective school. It is not recommended that students apply for the teacher education curriculum if the average grade in the field in which they plan to teach is less than "B".

*Industrial Education Majors.

COURSES IN EDUCATION**For Undergraduates****211. Orientation**

This course consists of lectures and discussions designed to provide the student with functional insight into methods of improving study, taking notes, and using the library. It introduces the student to various broad groups of vocations. Effective matching of individual qualifications and significant occupational requirements will be considered. Any quarter. Credit 1(1-0).

213. Safety Education

Safety in the home, farm, school, highway, and industry. Studies of the common accidents in these areas, and some solutions. The course will bring representatives of Fire Department, Highway Department, Health and Recreation to assist with topics. Credit, 3(3-0).

221. General Psychology

The objectives of this course are to acquaint the student with what psychology is, what it aims to do, how its data are gathered, and the principles of human behavior which it attempts to describe. This course will not be counted to meet the specific requirements in education for a high school teacher's certificate. Fall, Winter, Spring. Credit 5(5-0).

222. Introduction to the Study of Education

This course is designed to give the student an overview of the historical background of the systems of education in the United States, their aims, organization and procedures, and of the principles and practices on all levels of the American educational system. Consideration is given to qualifications for teaching with emphasis on the requirements of the state of North Carolina. Requirements of all students planning to qualify for a teaching certificate in North Carolina. Credit 3(3-0).

223. Adolescent Psychology

This course is designed to give the student a comprehensive survey of the pre-adolescent growth, development and maturation; and an intensive study of the physical, mental, emotional, social and moral growth through adolescence. Situations of a laboratory nature, in which the student might observe and record, classify and interpret the behavior of adolescents will be selected from the available facilities on the campus and in the community. Credit 3(2-2).

224. Philosophy of Education

The general aim of this course is to acquaint the student with a unified view of the whole educative process, in the light of modern Biology, Psychology, and Sociology, with emphasis on the philosophical bases and implications as they relate to the pupil, curriculum, teacher, and the institution. Credit 3(3-0).

225. Audio-Visual Laboratory

Practical experiences in the operation and maintenance of projectors, recorders, radios, television sets, etc. Credit 3(2-2).

226. Mental Hygiene

The aim of this course is to help students gain a better understanding of the factors influencing optimum adjustment of the individual. Major emphasis will be placed upon basic principles of adjustment and mental hygiene, varieties of adjustment, personality development, and psychotherapy in theory and in practice. Prerequisite: Ed. 221 and 223. Credit 5(5-0).

231. Educational Psychology

This course is designed to acquaint the student with the basic problems underlying the psychology of education. Its major topics include individual differences, the development of personality, motivation of learning and development, the nature of learning and the procedures which best promote its efficiency. Prerequisite: Ed. 223. Credit 3(3-0).

233. Introduction to Guidance

This course is designed to introduce the student to various systems of individual and group guidance, with special reference to the secondary school. The student will be required to develop and to defend his philosophy of guidance, by means of the best available evidence gleaned from experimentation and controlled observation at either on or off-campus agencies. Special attention will be paid to the development of theory and practice for handling special cases of learning deficiencies in reading, speech, writing, and mathematics. In the laboratory, the student will be introduced to practical guidance materials and to a variety of situations designed to bring into bold relief some of the fundamental promises of guidance. Prerequisite: Ed. 231. Credit 3(2-2).

234. Field-Laboratory Experiences

This course is designed to place the student in position to summon, organize, and supply to the task of helping individuals learn, all the resources of the school and community. The student will apply his mastery of the fundamental theoretical concepts essential to opening insight into behavior, to real situations in the field, provided by various community agencies. The student will be expected to show progressive growth and maturation for handling children of different ages in, and from different settings. Credit 3(½-3).

236. Tests and Measurements

In this course special attention will be paid to a variety of standardized and teacher-made measuring devices, to acceptable methods of selecting, administering, and interpreting all types of tests applicable to the

school and classroom. Extensive practice in the administration and interpretation of selected tests, will be provided in a laboratory setting. Prerequisite: Education 221, 223, 231. Credit 3(2-2).

237. Principles of Secondary Education

This course is designed to provide the student with an understanding of the history, nature and function of the secondary school and its relationship to the elementary school and adult life. Major consideration will be given to the development of the secondary school, aims and functions of secondary education, characteristics of the secondary school pupil, and curriculum, the high school teacher, guidance, teaching load and professional ethics. Prerequisite: Ed. 222 and Ed. 224, Ed. 233 or 236. Credit 3(3-0).

241. Special Methods

This course is designed to assist the student in gaining an understanding of the use of special teaching methods, techniques, devices, and materials related to each of the special fields of teaching. Opportunity for students to observe classes and teachers at work will be provided. Open only to seniors. Prerequisite: Ed. 231, 237. Fall and Winter. Credit 5(5-0).

243. Methods of Teaching English

A study of materials and methods of teaching English in the high school. Required of those planning to teach English. Prerequisites: Forty hours of English, Ed. 231, and 237 or 238. Fall and winter. Credit 5(5-0).

245. Methods of Teaching Social Sciences

Designed to provide the student with an understanding of the place of Social Sciences in high school and to assist him in understanding the techniques of social science instruction on the high school level. Required of those planning to teach the subject. Prerequisites: Forty hours of Social Studies, Ed. 231, and 237. Fall and Winter. Credit 5(5-0).

246. Methods of Teaching Mathematics

A course which deals with evaluation of subject matter, materials, methods and techniques, and objectives in the teaching of mathematics in the junior and senior high school. Required of those planning to teach the subject. Prerequisite: 30 hours of Mathematics: Ed. 231, 237. Fall and Winter. Credit 5(5-0).

247. Methods of Teaching Modern Languages

This course is devoted to a study of the problems and difficulties experienced in teaching Foreign Languages. Special attention is given to the matter of classroom aids, equipment, etc. Required of those students planning to teach languages. Prerequisite: 40 hours of French; Ed. 231 and 237. Fall and Winter. Credit 5(5-0).

248. Methods of Teaching Art

A study of the aims and objectives, methods and technique of art teaching in the modern school. Special attention is given to planning courses of study, presentation, selection of equipment, reference and illustrative material and correlation. Considerable emphasis is placed on blackboard drawings. Required of those wishing to qualify as art teachers. Prerequisite: 45 hours of Art; Ed. 231, 237. Fall and Winter. Credit 5(5-0).

249. Methods of Teaching Science

A study of modern methods, materials and techniques of teaching such subjects as biology, chemistry, physics, and general science in the high school. Required of all those planning to teach in this field. Prerequisites: Forty hours of Science, Ed. 231, and Ed. 237. Fall and Winter. Credit 5(5-0).

250. Methods of Teaching Commercial Subjects

Organization, preparation and care of materials, followed by an analysis of the methods of procedure, standards and objectives of the teacher of commercial subjects in high school. Students may be admitted to this course only upon the recommendation of the head of the Department of Commercial Education. Fall and Winter. Credit 5(5-0).

251*. Directed Teaching

This course is designed to provide the students an opportunity to put to use methods, techniques, and materials of instruction in a real classroom situation under supervision. Prerequisites: Ed. 241, an average grade of "B" or above in the field in which directed teaching is to be done. Maximum load, including Ed. 251, will be 13 hours. Fall, Winter and Spring. Credit 5(2-6).

501. Introduction to Audio-Visual Education

This course aims to orientate the student to the basic principles and practices of audio-visual aids for use in classroom instruction. Credit 3(1-4).

502. Constructing Audio-Visual Materials

Constructing and designing audio-visual aids materials for the classroom use. Credit 3(1-4).

*All students planning to teach are required to spend at least sixty clock hours in practice teaching in the type of school in which they plan to work. Students should schedule this course only after consultation with the director of practice teaching. In no instance will a student be permitted to carry more than thirteen hours (including Education 251) during the quarter this course is scheduled.

DEPARTMENT OF ELECTRICAL ENGINEERING

The curriculum of the Department of Electrical Engineering provides comprehensive training in the fundamental sciences—mathematics, physics, chemistry—with selected courses in the humanities designed to develop well-rounded engineers.

The required courses in electrical engineering which are offered by the Department may be mentioned briefly. Electrical power engineering has to do with the theoretical and practical phases of power generation, distribution, and utilization. Electrical communication deals with the transmission of signals, speech, music, and pictures by open-wire lines, cables, and radio. Electronics is concerned with the statistical behavior of electrons and ions in various types of electrical equipment.

Throughout the various courses the teaching of theory and its modifications by practice, the development of an analytical judgment, and the acquiring of a fundamental scientific background are emphasized.

CURRICULUM

Freshman Year

(See First Year's Curricula of Engineering, Page 72.)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 321, 322, 323	5 (5-0)	5 (5-0)	5 (5-0)
Physics 321, 322, 323	5 (3-4)	5 (3-4)	5 (3-4)
E. E. 324, 325, 326	5 (3-4)	5 (3-4)	5 (3-4)
Air or Military Science 221, 222, 223	2 (2-2)	2 (2-2)	2 (2-2)
M. E. 323	3 (0-6)	.....	.....
Machine Shop 328 .....	.....	2 (0-4)	.....
M. E. 327 .....	.....	.....	3 (3-0)
Engineering Problems, M. E. 318, 319	1 (0-2)	1 (0-2)	.....
	<hr/>	<hr/>	<hr/>
	21	20	20

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
E. E. 331, 332, 333	3 (3-0)	3 (3-0)	5 (3-4)
E. E. 334, 335, 336	3 (1-4)	3 (1-4)	3 (3-0)
M. E. 331, 332, 333	5 (5-0)	5 (5-0)	5 (5-0)
Math. 331	5 (5-0)	.....	.....
Econ. 231 .....	.....	5 (5-0)	.....
M. E. 321 .....	.....	.....	3 (2-2)
*Electives	4 ()	3 ()	3 ()
	<hr/>	<hr/>	<hr/>
	20	19	19

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
E. E. 346, 347, 348	4 (3-3)	4 (3-3)	4 (3-3)
E. E. 355, 356, 357	4 (3-3)	4 (3-3)	4 (3-3)
E. E. 360, 361 .....	.....	3 (3-0)	3 (3-0)
Econ. 234	5 (5-0)	.....	.....
Phy. 332, 333	3 (3-0)	3 (3-0)	.....
M. E. 336 .....	.....	.....	3 (3-0)
M. E. 353 .....	.....	.....	1 (0-3)
M. E. 337 .....	.....	.....	3 (3-0)
*Elective	3 ()	3 ()	3 ()
	<hr/>	<hr/>	<hr/>
	19	17	21

*suggested Electives:

- Math. 324.
- English 224, 244.
- Machine Shop 329.
- M.E. 341, 317, 339.
- Math. 501, 506.
- Phy. 331, 337, 338, 340.
- E.E. 351, 354.

COURSES IN ELECTRICAL ENGINEERING

321. Basic Electrical Engineering I

A comprehensive coverage of electrical engineering fundamentals and applications for non-electrical engineering students. Elementary D. C. circuits; D. C. machinery; coordinated laboratory work. Prerequisites: Phy. 323, Math. 323. Credit 5(3-4).

322. Basic Electrical Engineering II

A continuation of E.E. 321. A. C. machinery theory; electron tubes and circuits; electrochemical processes; coordinated laboratory work. Prerequisites: E. E. 321. Credit 5(3-4).

323. Basic Electrical Engineering III

A continuation of E. E. 322. Electric motor applications; electrical illumination; industrial measurement and control; electrical communication; coordinated laboratory work. Prerequisite: E. E. 322. Credit 5(3-4).

324. Introduction to Electrical Engineering I

A fundamental course in electrical concepts and units, network concepts and units, with coordinated laboratory work for electrical engineering students. Corequisites: Phy. 321, Math. 321. Credit 5(3-4).

325. Introduction to Electrical Engineering II

A continuation of E. E. 324. Magnetic concepts and units, electro-magnetic forces, motional electromagnetic forces. Coordinated laboratory. Prerequisites: E. E. 324. Credit 5(3-4).

326. Introduction to Electrical Engineering III

A continuation of E. E. 325. Electric fields and concepts, capacitance, electrochemistry, introduction to electronics. Prerequisites: E. E. 325. Credit 5(3-4).

331. Electric Circuit Analysis I

Electric circuit theory, parameters, and calculations; magnetic circuit and dielectric circuit theory and calculations. Prerequisites: Math. 323, Physics 323, E. E. 326. Credit 3(3-0).

332. Electric Circuit Analysis II

Vector Algebra as applied to A. C. circuit analysis, periodic functions; A. C. circuit parameters, theory and calculations. Prerequisite: E. E. 331, E. E. 334. Credit 3(3-0).

333. Direct Current Machinery

Principles, characteristics and operation of direct current apparatus. Laboratory work coordinated with class-room study. Required of Juniors in E. E. Prerequisites: E. E. 332. Credit 5(3-4).

334. Electrical Measurements I

Theory and operation of wheatstone bridges, ballistic galvanometers, potentiometers, various methods of measuring direct current network parameters. Credit 3(1-4). Prerequisite: E. E. 326, or Physics 331, Math. 323, Physics 323. Corequisite for E. E. students, E. E. 331.

335. Electrical Measurements II

A. C. bridges, measurement of power, A. C. circuit parameters, magnetic measurements. Credit 3(1-4). Prerequisite: E. E. 334. Corequisite: E. E. 332.

336. Principles of Electric and Magnetic Fields

Basic electric fields, basic magnet fields, elementary electron ballistics. Prerequisites: E. E. 332, Math. 331. Credit 3(3-0).

346. Applied Electronics

A study of electron ballistics and emission as applied to vacuum tubes, gas filled tubes, and specialized tubes. Coordinated laboratory work. Prerequisites: Math. 331, E. E. 336. Credit 4(3-3).

347. Radio Engineering I

The application of vacuum tubes to radio circuits; small signal amplifiers; radio and audio amplifiers; oscillating systems. Coordinated laboratory work. Prerequisite: E. E. 346. Credit 4(3-3).

348. Radio Engineering II

A continuation of E. E. 347. Modulation and demodulation systems; wave-shaping systems, receiving and transmitting systems. Coordinated laboratory work. Prerequisite: E. E. 347. Credit 4(3-3).

351. Power Transmission Lines

Long distance transmission of power. Determination of distributed line parameters; general circuit constants and equations; circle diagrams as applied to long distance power lines. Prerequisites: E. E. 332, Math. 331. Credit 5(5-0).

354. Radio Circuits

Special topics and laboratory work of special interest to the student. Most of the work is given by the project method. Credit 5(1-8). Prerequisite: E. E. 346.

355. Alternating Current Apparatus I

Principles, characteristics, and operation of alternating current apparatus. Application of circuital theory to a-c machinery; characteristics of single and polyphase transformers. Coordinated laboratory work. Prerequisite: E. E. 332. Credit 4(3-3).

356. Alternating Current Apparatus II

A continuation of E. E. 355. Theory and characteristics of single and three phase induction machinery. Coordinated laboratory work. Prerequisite: E. E. 355. Credit 4(3-3).

357. Alternating Current Apparatus III

A continuation of E. E. 356. Theory and characteristics of synchronous machines; power inverters and rectifiers. Coordinated laboratory work. Prerequisite: E. E. 356. Credit 4(3-3).

360. Electromagnetic Wave Theory I

A study of the fundamental electronic circuit concepts and their applications to microwave tubes; the analysis of transmission lines and networks at high frequencies. Prerequisite: E. E. 336. Corequisite: E. E. 347. Credit 3(3-0).

361. Electromagnetic Wave Theory II

A continuation of E. E. 360. Maxwell's equations and their application in the analysis of wave propagation; reflecting phenomena; wave guides and radiating systems. Prerequisite: E. E. 360. Credit 3(3-0).

DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE

AIMS OF THE DEPARTMENT OF ENGLISH

The objectives of the department of English are as follows:

1. To develop in students the skills and techniques of effective writing, reading, and speaking.
2. To lead students to the realization that a mastery of the tools of communication contributes to achievement in all fields of major concentration and to success in all phases of living.
3. To equip students with adequate subject-matter background for the effective teaching of English and with the skills essential to the attainment of related vocational objectives.
4. To cultivate in students an appreciation for literature; to develop ability to interpret it readily; to stimulate a taste and desire for wide reading of the best forms of literature.
5. To prepare and train students for graduate study in English.

GENERAL REQUIREMENTS

All freshmen are required to take a placement test in English. Those failing this test must register for Remedial English (Eng. 210).

A minimum of twenty quarter hours in English is required for graduation from all departments. All students of all departments must take Eng. 211, Eng. 212, and Eng. 213. Five hours literature are required.

ENGLISH MAJORS AND MINORS

English majors and minors are required to have an average of **B** in their three Freshman English courses and to pass a comprehensive examination in the field of English at the end of the Fall Quarter of their senior year. Those failing this examination will be required to prepare for a second examination.

A major in English is designed for persons interested in teaching English in the secondary school or in pursuing graduate work in the field. It is also recommended for those intending to follow law, the ministry, writing, or research as a profession.

SUGGESTED SEQUENCE OF COURSES IN ENGLISH

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Introduction to American Literature 220 ..	5 (5-0)	.....	.....
Development of English Literature 222	3 (3-0)	.....
Development of English Literature 223	5 (5-0)
Voice and Speech Improvement 224	3 (2-2)	.....
English Elective	3 (3-0)

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
American Literature 221	5 (5-0)	.....	.....
Shakespeare 234 .....	.....	5 (5-0)	.....
Advanced Grammar 237 .....	.....	.....	3 (3-0)
English Elective .....	.....	.....	3 (3-0)

Senior Year

Advanced Composition 244	3 (3-0)	.....	.....
Methods of Teaching English, Ed. 243 ...	.....	5 (5-0)	.....
Directed Teaching, Ed. 251 .....	.....	.....	5 (2-6)

**COURSES IN ENGLISH
LANGUAGE AND COMPOSITION**

210. Remedial English

Emphasis upon the elementary requirements in English usage; such as, the rudiments of grammar, punctuation, and spelling. Students who fail to pass the placement test in English are required to complete this course in addition to the regular English requirements. Credit 3 (3-0).

211. Grammar

A review of the fundamental principles of grammar and the application of these principles in sentences and paragraphs. Any quarter. Credit 5 (5-0).

212. Composition

Practice in paragraph development, outlining, letter writing, short themes and using the library. This very practical course introduces the student to the kinds of writing he is likely to do anyway. Prerequisite: English 211. Credit 5 (5-0).

213. Composition and Reading

This course introduces the student to the techniques of research writing. Prerequisite: English 212. Credit 5 (5-0).

231. Journalism

Theoretical and practical work in recognizing, gathering, and writing news. While primary attention is given to the development of journalistic technique, there is considerable drill on the fundamental principles of composition. Prerequisite: English 213. Credit 3 (3-0).

236. Argumentation and Debating

A study of the principles of argumentation. The course consists of discussions, lectures, and classroom debates, all of which procedures are preliminary to public debates. Prerequisite: Eng. 213. Credit 3 (2-2)

237. Advanced English Grammar

A study of English grammar with emphasis on the present status of modern American English. Spring. Credit 3(3-0).

244. Advanced Composition

This course is intended to strengthen the techniques of writing developed in English 212 and 213. The student will not only strengthen and polish his written expression, but he will have opportunity to practice on the more specialized forms of writing that appeal to him. Credit 3(3-0).

245. Review for English Majors and Minors

This course is planned particularly for seniors who desire personal attention in further mastering the fundamentals of English composition and in becoming more conversant with the general field of English and American literature. Winter. Credit 0(2-0).

SPEECH AND EXPRESSION**224. Voice and Speech Improvement**

A study of the basic attributes of effective delivery. Tests and recordings to discover speech and voice defects. Drills, exercises, and projects to improve general speaking habits. Any quarter. Credit 3(2-2).

225. Public Speaking

A study of the methods by which public speeches are made clear, interesting, and forceful. Practice in writing and delivering speeches according to the occasion. Prerequisite: English 224. Credit 3(2-2).

227. Oral Interpretation

Training in expressive audience reading of selections from classical and modern literature. Credit 3(1-2).

228. Acting

A laboratory course designed to develop skill in voice, diction, and pantomime by means of readings, monologues, skits, and short plays for school and community. Practical experience in the major A. and T. dramatic productions. Credit 3(1-4).

229. Parliamentary Procedure

Theory and practice in the rules and customs governing organization and proceedings of deliberative bodies. Prerequisite: English 213. Credit 1(0-2).

LITERATURE**220. Introduction to American Literature**

A survey of American literature from colonial times to the present. Prerequisite: Eng. 213. Credit 5(5-0).

221. American Literature

A study of major American writers since 1850. Prerequisite: English 213. Credit 5(5-0).

222. Development of English Literature

Reading in English Literature from the beginning to 1700. Study of the growth of ideas and institutions, of the types of literature, and of the great personalities who have contributed most to the literature. Lectures. Reports. Credit 3(3-0).

223. Development of English Literature

English Literature from 1700 to the twentieth century. Lectures. Reports. Prerequisite: Eng. 213. Credit 5(5-0).

226. Dramatic Literature

A survey of dramatic literature. Origin of the drama, readings in Greek, classical French, Elizabethan, and contemporary drama. Credit 3(3-0).

234. Shakespeare

A detailed, chronological study of the principal plays taken from all four of the periods of dramatic production. Lectures, reports, one long paper. Prerequisite: 20 hours of English. Credit 5(5-0).

242. The Romantic Era

The principles and ideas of Romanticism as expressed in the works of the principal English writers of poetry and prose from 1798 to 1823. Term report. Credit 3(3-0).

243. The Victorian Era

Readings in the works of the principal English writers of the Victorian Age. Term report. Credit 3(3-0).

246. The Novel in English

The growth and development of the novel in English from the eighteenth century to the present time. Credit 3(3-0).

DEPARTMENT OF FOREIGN LANGUAGES

The department aims to develop reasonable facility in the reading, speaking, and writing of the principal modern foreign languages. It endeavors, furthermore, to lead students to an intelligent appreciation of outstanding literary masterpieces, to develop a better knowledge of continental contributions to modern culture, and to create a spirit of understanding that will result in proper attitudes toward different national groups.

Elementary French courses 211, 212, 213 are recommended for those students who have no previous knowledge of French, or who present one unit of high school credit. For those students presenting two units of high school credit. Intermediate French courses 214 and 215 are required. However, if students with two units of high school French should take Elementary French, they are required to complete 15 hours on the same level.

The following courses are suggested as majors and minors and are recommended for those interested in graduate study, research, government service, or commerce.

For Freshmen and Sophomore Courses, see page 00.

MAJOR IN FOREIGN LANGUAGES

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
French 214, 215, 216	5 (5-0)	5 (5-0)	5 (5-0)
French 217, 218, 219	3 (3-0)	5 (5-0)	5 (5-0)
Spanish 211, 212, 213	5 (5-0)	5 (5-0)	5 (5-0)
Minor or Electives	5 (5-0)	3 (3-0)	3 (3-0)

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
French 221, 222, 223	5 (5-0)	5 (5-0)	5 (5-0)
French 231, 245, 247	5 (5-0)	5 (5-0)	5 (5-0)
Spanish 214, 215, 216	5 (5-0)	5 (5-0)	5 (5-0)
Minor or Electives	3 (3-0)	3 (3-0)	3 (3-0)

COURSES IN FRENCH

211. Elementary French

Special attention is given to gaining a complete knowledge of the essentials of grammar and pronunciation, to the acquisition of a vocabulary, and to elementary composition. Fall. Credit 5 (5-0).

212. Elementary French

This course continues the work in grammar and pronunciation. Conversation and dictation are encouraged. Winter. Credit 5 (5-0).

213. Elementary French

Practice in oral and written composition is continued. The early acquisition of taste for advanced French is stimulated through the reading, translation, and interpretation of easy modern French prose. Spring. Credit 5(5-0).

214. Intermediate French

This course is open to students who have completed two units of high school French or college French 211, 212, 213. A brief review of grammar is followed by practice in pronunciation. Fall. Credit 5(5-0).

215. Intermediate French

The reading of French plays is encouraged, and the ability to write and converse in French is further developed. Winter. Credit 5(5-0).

216. Phonetics

This course is intended for students majoring and minoring in French. It is also recommended for those who wish to improve their pronunciation of the language. Spring. Credit 5(5-0).

217. French Literature of the Middle Ages and the Renaissance

A general introduction to the more advanced study of French literature. Its purpose is to give a clear idea of the great periods and the main tendencies in the history of French thought and letters from the Middle Ages to the Seventeenth Century. Fall. Credit 5(5-0).

218. Advanced French Composition

An advanced course in oral and written self-expression in French. Special attention is given to vocabulary building, free composition, and conversation, prepared and improvised, covering the many phases of everyday activities. Spring. Credit 5(5-0).

219. Advanced French Conversation

A course for students having some experience in written French. It aims to improve oral and aural conversation. Working groups will be arranged for practice in French conversation. Spring. Credit 5(5-0).

220. Advanced French Grammar and Reading

The object of this course is to give the student practical training in the use of advanced French grammar and reading. It is conducted largely in French. Spring. Credit 5(5-0).

221. French Literature in the Seventeenth Century

This course presents Classicism through the masterpieces of Corneille, Racine, Moliere and other authors of the "Golden Period" in French letters. Conducted in French. Fall. Credit 5(5-0).

222. French Literature of the Eighteenth Century

The object of this course is to study in particular the life and works of Montesquieu, Voltaire, Rousseau, and the Encyclopedists. Conducted in French. Winter. Credit 5 (5-0).

223. French Literature of the Nineteenth Century

The object of this course is to study the great literary currents of the nineteenth century, romanticism and realism. Spring. Credit 5 (5-0).

231. Modern Contemporary French Literature (Formerly 243)

This course deals with the chief writers and literary currents of the time. Lectures and outside readings. Credit 3 (3-0).

233. Intermediate Conversational French

The chief aim of this course is to give students intensive training in self-expression and to improve their pronunciation and diction in reading and speaking. Class is conducted in French. Winter. Credit 3 (3-0).

234. Advanced Conversational French

Intensive oral and written work, consisting of discussions and compositions in French. Assigned outside readings on newspaper articles, literature, civilization, etc. encouraged. Spring. Credit 3 (3-0).

245. French Civilization

A general survey of the history of France, with emphasis on the social, political and economic development designed to give the student an understanding of present conditions and events. A detailed study is made of such French institutions as art, music and education. This course is also offered in conjunction with reports on collateral readings. Credit 5 (5-0).

246. French Seminar. Thesis Problem

Open only to seniors majoring in Foreign Languages. Credit 3 (3-0).

247. French for Prospective Teachers

This course is elective for seniors with the consent of the instructor. A brief review of the principles of grammar is followed by an intensive drill in phonetics. Aims, problems, methods, and tests are discussed. Spring. Credit 3 (3-0).

COURSES IN SPANISH**211. Elementary Spanish**

The primary object of this course is to secure the understanding of easy Spanish, written and spoken. Much attention is given to the essentials of grammar and pronunciation. Fall. Credit 5 (5-0).

212. Elementary Spanish

This course continues the work in grammar and pronunciation. Prose reading is encouraged by exercises in vocabulary building. Winter. Credit 5(5-0).

213. Elementary Spanish

Attention is given to advanced elementary grammar. Prose reading continues and a taste for advanced Spanish is stimulated through the reading of poetry. Credit 5(5-0).

214. Intermediate Spanish

This course is open to students who have completed two units of high school Spanish or college Spanish 211, 212, 213. Thorough review of Spanish syntax with emphasis on its essential difficulties. Fall. Credit 5(5-0).

215. Intermediate Spanish

Practice in writing idiomatic Spanish in translations and free compositions. Readings from modern authors. Winter. Credit 5(5-0).

216. Survey of Spanish Literature

A survey of the most important movement, writers, and works from the Middle Ages up to the present time. Spring. Credit 5(5-0).

DEPARTMENT OF HOME ECONOMICS

The Department of Home Economics offers courses designed for curricula leading to the Bachelor of Science degree in the following subject matter areas: (1) Clothing, (2) Home Economics Education, (3) Institutional Management, (4) Nursery School Education, and (5) Foods and Nutrition. Two-year terminal programs leading to a certificate are offered in (1) Dressmaking, and (2) Cafeteria Management.

The several curricular are offered to meet the needs of students who plan to train for professional employment as teachers in public schools, nursery school teachers, home demonstration agents, hospital dietitians, dressmakers and cafeteria workers.

Students who plan to take courses in home economics leading to the degree of Bachelor of Science should follow the Basic Curriculum in Home Economics for the Freshman and Sophomore years.

The Head of the Home Economics Department and faculty will assist the student in planning a program for the junior and senior years.

Special programs will be arranged to meet the needs of students who wish to follow the two-year programs in dressmaking and cafeteria management.

BASIC CURRICULUM IN HOME ECONOMICS**First Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113	5	5	5
Clothing 110, 112, 113	2	3	4
English 211, 212, 244	5	5	3
Home Economics Education 111	4	---	---
Art 314	2	---	---
Physical Education 210a, b, c, 213	1	1	2
Foods and Nutrition 120	---	4	---
Zoology 111	---	---	5
	—	—	—
	19	18	19

Second Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Zoology 121	5	---	---
Music	3	---	---
English 224, 225	3	3	---
Physical Education 220a, b, c	1	1	1
Art 317	3	---	---
Child Development 115	3	---	---
Bacteriology 123	---	5	---
Foods and Nutrition 121*	---	5	---
Home Administration 121	---	4	---
Home Administration 134	---	---	3
Sociology 231	---	---	5
Education 221	---	---	5
	—	—	—
	18	18	14

*Majors in Foods and Nutrition will substitute Foods and Nutrition 125.

Other Courses Required of all Home Economics Majors

Economics 231, 236	8 hrs.
History 234	3 hrs.
Home Administration 143	5 hrs.
Physics 311	5 hrs.

**THIRD AND FOURTH YEAR MAJOR REQUIREMENTS
CLOTHING**

Art 318, 319, 320, 327	11 hrs.
Industrial Arts 330	3 hrs.
Accounting 301, 302, 303	9 hrs.
Clothing 121, 122, 127, 131, 132, 133, 134, 135, 136, 137, 140	39 hrs.
Dry Cleaning	3 hrs.
Business Administration 317, 318	4 hrs.

Recommended Electives

Art 311, 312, 337, 338, 339, 341, 342
Industrial Arts 321
Ornamental Horticulture 112
Clothing 501
Home Administration 122

FOODS AND NUTRITION

Bacteriology 134	4 hrs.
Chemistry 121, 122, 123, 131, 132, 133, 135	31 hrs.
Foods and Nutrition 125, 126, 127, 128, 129	26 hrs.

Recommended Electives

Chemistry 147, 148, 505.
Foods and Nutrition 130, 131, 501
Home Economics Education 141, 142
Zoology 123.

INSTITUTIONAL MANAGEMENT

Chemistry 131, 135	10 Hours
Foods and Nutrition 123, 126, 127, 129	19 Hours
Institutional Management 121, 122, 123, 124, 125, 126, 131	35 Hours
Education 223 and 231	6 Hours
Business Administration 317, 318	4 Hours
Accounting 301, 302, 303	9 Hours

Recommended Electives

Home Economics Education 141, 142, 152
Bacteriology 134
Foods and Nutrition 128, 130, 131
Institutional Management 127, 128, 129, 130, 501
Personnel Management

HOME ECONOMICS EDUCATION

Education 222, 223, 224, 225, 231, 233, 236	24 hrs.
Home Economics Education 152, 153	10 hrs.
Clothing	5 hrs.
Foods and Nutrition 123	5 hrs.
Rural Sociology 131	3 hrs.
Industrial Education 330	3 hrs.

Recommended Electives

Education 213, 226, 234, 502
Business Administration 317, 318
Clothing 127, 134
Art 312
Agricultural Education 501, 501a, 501b
Sociology 233, 504
Agricultural and Home Economics Extension 141
Ornamental Horticulture 112
Home Economics Education 141, 142

NURSERY SCHOOL EDUCATION

Education 222, 231, 236	9 hrs.
Sociology 236, 241	6 hrs.
Art 311, 312	6 hrs.
Child Development 121, 133	9 hrs.
Clothing 121	3 hrs.
Foods and Nutrition 128	5 hrs.
Nursery School Education 131, 132, 133, 134, 141, 142	22 hrs.

Recommended Electives

Education 213, 224, 226
Physical Education 234
Art 313, 337, 338, 339
Nursery School Education 501
Home Economics Education 141, 142

Child Development**115. Introduction to Child Development**

Survey of the needs of children and how these needs are being met by the home, school and community. Credit 3(3-0).

131. Child Development

A study of the physical, mental, social, emotional, personality, and language development of the child from conception through six years of age. Credit 3(3-0).

132. Child Development

A study of the physical, mental, social, emotional and personality development of the child from early childhood through adolescence. Discussions of the problems of this age group. Planning, organizing and supervising playgrounds for children of school age. Credit 4(2 hrs. lecture—laboratory hours arranged).

133. Child Development

The aim of this course is to give the student a comprehensive study of the physical, social, emotional, personality and language development of the child from birth through adolescence. Laboratory experiences with children will be provided to enable the student to observe, record and interpret the behavior of these age groups. Credit 5 hours—(3 hours lecture and laboratory hours arranged).

CLOTHING**110. Clothing Selection**

Selection of clothing for individual differences with emphasis on the elements of design and color. Credit 2(1-2).

112. Textiles

Textile fibers, their source, characteristics and production into fabric. The social, economic and hygienic aspects and care of clothing. Credit 3(1-4).

113. Elementary Clothing Construction

Fundamental principles of clothing construction based on the use of the commercial pattern. Minimum cost \$15.00. Credit 4(1-6).

121. Children's Clothing

A study of children's clothing with emphasis on the selection and construction of functional garments. Minimum cost \$7.50. Credit 4(2-4).

122. Advanced Clothing Construction

This course will consist of a consideration of the clothing needs of family members with laboratory experiences to meet individual needs. Minimum cost \$20.00. Credit 5(2-6).

127. Home Furnishings

Arrangement of home furnishings with emphasis on color, line and design. Laboratory experience in construction principles of making slipcovers, draperies and other fabric furnishings. Prerequisites: Art 327, H.A. 134. Credit 5(2-6).

131. Historic Costume

The history of costume and its adaptation to our modern dress. Prerequisites: Art 320 and 327. Credit 3(3-0).

132. Fitting and Pattern Study

Partial drafting of a foundation garment from which an individual flat pattern is made. Initiative and originality are encouraged in designing several different garments from the original flat pattern. Minimum cost \$13.00. Credit 4(1-6).

133. Draping

Draping and designing in the actual fabric on the form with emphasis on line, form and texture of fabric. Prerequisites: C.T.R.A. 132, Art 320 and 317. Credit 3(1-4).

134. Clothing Reclamation

Problems in altering, repairing, remaking, redyeing and reclaiming of old clothing. Credit 3(1-4).

135. Millinery

A course designed to give experiences with various millinery materials, equipment, trimmings and reblocking. Minimum cost \$10.00. Credit 2(0-4).

136. Applied Dress Design

Practical application of art principles to the development of original designs in clothing and accessories. Credit 3(1-4).

137. Tailoring for Women

A study of the principles of tailoring as they apply to women's coats and suits. Experiences are given in the handling of more difficult textile fabrics. Minimum cost \$20.00. Prerequisite: Clothing 122. Credit 5(2-6).

140. Field Experience in Clothing

This course is designed to give the student practical experiences on a commercial basis. Credit 5 hours.

Advanced Undergraduates or Graduates**501. Special Problems in Clothing**

Individual work on special problems in clothing. Credit 3-5 hours.

Foods and Nutrition**120. Essentials of Foods and Nutrition**

A study of the basic principles of nutrition in the maintenance of optimum health and the application of elementary cookery techniques in the feeding of individuals. Credit 4(3-2).

121. Family Foods

The application of the principles of nutrition and cookery to the planning, selection, preparation and service of the family's meals. Special attention will be given to time and money management. Credit 5(2-6).

123. Nutrition

A study of the scientific principles of nutrition in relation to normal and dietary deficiency conditions. Laboratory experiences will consist of experimentation with small animals and human diets. Credit 5(4-2).

125. Principles of Cookery

A study of the principles of science related to the preparation and preservation of foods. Credit 4(2-4).

126. Principles of Cookery

A continuation of Foods and Nutrition 125. Credit 4(2-4).

127. Meal Planning and Service

Low and moderate cost food plans are made to meet the needs of different family groups with experiences in marketing, preparing and serving meals. Credit 5(3-4).

128. Child Nutrition

A study of the principles of normal nutrition and their application to the feeding of children in family and nursery school groups. Consideration will be given to the planning of diets in conditions demanding alterations in the normal dietary pattern. Credit 5(3-4).

129. Diet Therapy

This course will include a study of the application of the principles of nutrition to the treatment of certain diseases. Laboratory experiences will include the planning and preparation of special diets in hospital situations. Credit 5(3-4).

130. Recent Developments in Foods and Nutrition

A study of recent research in foods and nutrition through discussions of reports in current scientific journals. Credit 3(3-0).

131. Nutrition Education

A course designed to assist in the development of nutrition education programs in the school and community. Credit 3(2-2).

Advanced Undergraduates and Graduates**501. Special Problems in Foods and Nutrition**

Individual work on special problems in foods and nutrition. 3-5 hours credit.

Home Administration**112. Home Management**

Managing and caring for the home including the utilization of family resources. Credit 3(3-0).

121. Health and Home Nursing

Problems relating to family and community health are discussed. Laboratory experiences in how to care for the sick in the home include the American Red Cross Home Nursing Course. Credit 4(3-2). Formerly C.D.F.R. 121.

122. Personal and Family Finance

Specific study of family income and expenditures with emphasis on budget making. Wage levels as to locality, occupation and social demands are considered. Financial problems of the college student will be discussed. Credit 3(3-0). Formerly C.D.F.R. 122.

134. Housing

A course designed to help the student to interpret architectural plans for homes suitable for the low and moderate income family groups. Practical problems in the adaptation of rooms for more adequate use by the family. Credit 4(3-2).

142. Household Equipment

Selection, operation and care of household equipment. Credit 3(1-4).

143. Home Management Residence

Application of managerial principles and performance of household skills as they relate to personal, group and family living. Credit 5 hours.

Home Economics Education**111. Personal and Group Living**

This course is concerned with aiding in the solution of the immediate problems of personal and group living as the freshmen girls find them at college and at home. Credit 4(3-2). Formerly C.D.F.R. 111.

141. Demonstration Techniques

The application of the principles of demonstration techniques in all phases of home economics. Credit 3(0-6).

142. Audio-Visual Techniques and Materials

A course designed to give students practical experiences in the techniques of developing and using audio-visual materials in home economics. Credit 3(0-6).

152. Methods of Teaching Home Economics

A course designed to acquaint the student with home and family life education in the elementary and secondary schools. Emphasis is placed on the development of a personal philosophy of home economics and the application of educational principles to the teaching of home-making courses. Credit 5(5-0).

153. Observation and Directed Teaching

Experience in conducting classes in off-campus teaching centers. A minimum of 30 hours of observation and 60 hours of teaching is required. Credit 5 quarter hours.

Advanced Undergraduates or Graduates**501. Special Problems in Home Economics Education**

Individualized work on special problems in home economics education. Credit 3-5 hours.

NURSERY SCHOOL EDUCATION**131. Play and Play Material for the Preschool Child**

Discussion of the importance of play in all aspects of child development. The evolution of play equipment. Opportunity for the students to gain experience and explore the possibilities of all the various creative materials used by children. Credit 3(1-4).

132. Literature for the Young Child

A survey of prose and poetry for young children. Criteria will be developed for the selection and age placement of stories. Consideration will be given to the technique and art of telling stories to informal groups, as well as, giving an opportunity for telling and writing stories for young children. Credit 3(1-4).

133. Preschool Music

This course is learning to read and sing simple songs at sight *i.e.*, singing with neutral syllables. The process will include problems of tone, time and theory. Credit 3(2-2).

134. Preschool Music

Acquisition of an initial repertoire of children's tunes. Listening to songs and records for the preschool child. Criteria for selecting songs, rhythms and cooperation will be discussed. Credit 3(2-2).

141. Kindergarten and Preschool Methods

Methods and materials daily and long-range curriculum development to meet the needs of 2 to 5 year olds. Observation, discussion of reports, individual development, plant equipment, teacher-child relations and planning, P.T.A. meetings will be included. Credit 5(5-0).

142. Directed Teaching in the Nursery School

Practice teaching in the Nursery School. Conference for individual problems. A minimum of 90 hours of participation is required. Credit 5 hours.

Advanced Undergraduates or Graduates**501. Special Problems in Nursery School Education**

Individual work on special problems in nursery school education. Credit 3-5 hours.

DEPARTMENT OF INDUSTRIAL EDUCATION

The public schools of North Carolina, like the public schools of many states, are in constant need of securing qualified teachers of industrial education. To meet the needs, A. and T. College offers training for industrial arts teachers and trade teachers of vocational industrial subjects.

DEPARTMENT OBJECTIVES

The courses offered by the Department of Industrial Education are designed to serve the following purposes:

1. To prepare teachers of industrial arts and vocational industrial courses for public school service and to offer additional training to industrial teachers now in service.
2. To develop the students skill and manipulative ability in industrial processes.
3. To develop correct habits, attitudes and ideals for health and safety.
4. Supply student with the necessary informational background for shop teaching.
5. Give experience in typical teaching activities and practice in teaching industrial courses.
6. Familiarize students with aims, problems and literature relating to industrial education.
7. Develop an appreciation of the significance of industrial education in our society.
8. Stimulate a scholarly and scientific attitude toward problems of teaching.

TEACHER TRAINING FOR INDUSTRIAL ARTS EDUCATION

The prospective teacher of industrial arts education receives training in the fundamental skills of several trades. The fields of concentration are automobile mechanics, carpentry, ceramics, electricity, machine shop, masonry, mechanical drawing, radio servicing, welding and woodwork.

CURRICULUM FOR INDUSTRIAL ARTS EDUCATION**Freshman Year**

(See First Year's Curricula of Engineering, Page 72.)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Woodwork, I.A. 321, 322, 323	5(0-10)	5(0-10)	5(0-10)
Industrial Arts Drawing, I.A. 331, 332, 333	3(0-6)	3(0-6)	3(0-6)
Electricity, I.A. 326, 327, 328	3(0-6)	3(0-6)	3(0-6)
Military or Air Science 221, 222, 223	2(2-2)	2(2-2)	2(2-2)
Physical Education Electives	1(0-2)	1(0-2)	1(0-2)
Voice & Speech Improvement, Eng. 224 .....	.....	.....	3(2-2)
Music Elective	2(2-0)	.....	.....
Adolescent Psychology, Ed. 223 .....	.....	3(3-0)	.....
Educational Psychology, Ed. 231	3(3-0)
Materials of Construction I. A. 324	3(3-0)
Vocational Education, Ed. 331	3(3-0)
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	19	20	20

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Woodturning, Upholstery, Finishing I.A. 338, 339, 340	3(0-6)	3(0-6)	3(0-6)
General Metal, I.A. 334, 335, 336	3(0-6)	3(0-6)	3(0-6)
**Technical Electives	3(0-6)	3(0-6)	3(0-6)
Physics 321, 322	5(3-4)	5(3-4)	.....
Principles of Sociology, Soc. 231 .....	.....	.....	5(5-0)
Measurement and Evaluation, Ed. 236 .....	.....	.....	3(3-0)
Vocational Guidance, Ed. 332	3(3-0)	.....	.....
Shop Management, I.A. 347 .....	.....	3(3-0)	.....
*Electives	3	3	3
	—	—	—
	20	20	20

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physical Education Electives .....	.....	1(0-2)	.....
Art 311, 312	3(0-6)	3(0-6)	.....
Economics 231, 234	5(5-0)	5(5-0)	.....
Personal and Community Hygiene, Phys. Ed. 234	5(5-0)	.....	.....
Principles of Secondary Ed., Ed. 237 .....	.....	3(3-0)	.....

Trade Analysis, Ed. 341	3 (3-0)	.....	.....
Methods of Teaching Ind. Ed., Ed. 343 .....	.....	.....	5(5-0)
Observation & Practice Teaching, Ed. 344 ..	.....	.....	5(5-0)
Current Problems in Ind. Ed., Ed. 502 .....	.....	3 (3-0)	.....
*Electives	3	4	3
	<u>19</u>	<u>19</u>	<u>13</u>

**Technical Electives—9 hours required in one area:

Carpentry 312, 313, 314	Welding 311, 312, 313
Auto Mechanics 311, 312, 313	Mech. Engr. 328, 329, 330
Masonry 311, 312, 313	Sheet Metal 311, 312
Radio 311, 312, 313	
Art 337, 338, 339	

*Junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with the student's adviser.

Suggested Electives

I.A. 329, 330, 338a, 339a, 340a, 348, 506
M. E. 317, 323, 327
Com. Ed. 317, 318, 339
Ed. 213, 222, 224, 225
Phy. Ed. 238
Art 313

COURSES IN INDUSTRIAL ARTS

321. General Woodwork

Care and use of hand tools, principles of planning, squaring and laying out work. Special projects assigned to students in accordance with the student's background with the use of hand tools only. Credit 5(0-10).

322. General Woodwork

Emphasis is placed on the practical operation of such machines as variety saw, band saw, radial saw, planer, mortiser, shaper, tenon machine, belt and drum sanding machines. Credit 5(0-10). Prerequisite: I. A. 321.

323. Advanced Woodwork

Construction of projects from drawings or blueprints. Also care of power machines, saw filing, band saw brazing, sharpening and setting planer knives are part of the course. Prerequisite: I. A. 322. Credit 5(0-10).

324. Materials of Construction

A study of the manufacture and physical properties of iron, steel, timber, cement, concrete, and other materials encountered in technical fields, and the A. S. T. M., specifications and methods of testing. Prerequisite: Chem. 113. Credit 3(3-0).

326. Electric Wiring

This course covers the fundamental principles of two- and three-wire circuits for light and power. It also considers the study of and use of electrical wiring materials and electrical codes. Credit 3(0-6).

327. General Electricity

Instruction and laboratory practice covering fundamental principles of direct and of alternating current equipment. Study of meters, motors, generators, armature winding and alternating current circuits. Study of home appliances are made an integral part of the course. Credit 3(0-6).

328. Electricity (Radio)

Theory and fundamentals of radio communication circuits, and power supplies. Standard circuits are set up and tested in the laboratory. Part of the class period will be devoted to radio repair and code practice. Prerequisites I. A. 326, 327. Credit 3(0-6).

329. Craft and Hobby Work (Formerly Woodcrafts)

A basic course in the fundamentals of craft work. Designed especially for teachers of arts and crafts, elementary teachers, leaders of scoucraft, playgrounds, recreational centers, community centers, and for those who want merely the enjoyment which comes from working with materials. Study of fundamental operations, tools and materials, and construction of one or more small projects of wood, metal, leather, reed, or other available materials. Credit 3(0-6).

330. Repair and Maintenance of Home Furniture

A course designed for homemaking teachers to help them meet specific problems in the improvement and care of home furniture. Instruction will be given on simple upholstery techniques and other processes using tools and accessories for home repair. Opportunities will be provided for experience in finishing and refinishing wood. Students should make an effort to provide their own work project. Credit 3(0-6).

331. Industrial Arts Drawing

It is expected that the student shall acquire information and develop skills needed by a teacher in industrial arts drafting. Modern techniques are utilized and explained in light of teaching drawing at various levels in high school or vocational school. Instruction in A.S.A. conventions, projections, revolutions, developments, lettering and pictorial representation with reference to machine and woodworking drawing. Prerequisite: M. E. 311, 312. Credit 3(0-6).

332. Industrial Arts Drawing

Problems in sheetmetal drawing, shading, technical sketching, production illustration and industrial arts design. Prerequisite I.A. 331. Credit 3(0-6).

333. Industrial Arts Drawing

Basic elements in the planning and construction of residential buildings. Problems in floor plans, elevations, details and perspective. Study of kitchen, living rooms, dining room, bath room and bed room layout. Prerequisite: I.A. 332. Credit 3(0-6).

334. General Metals

A general introduction to machine shop methods. Operation of the lathe, milling machine, drill press, shaper and grinding of cutting tools. Heat treating of metals. Projects involve basic operations on each machine. Special emphasis is put on machine maintenance and machine shop calculations as well as related information. Credit 3(0-6).

335. General Metals

Fundamental machine and hand tool operations; care, use, and adjustment of sheet metal equipment; the development of simple patterns. Projects involve art metal, metal spinning, soft and hard solder, raising, chasing, seaming, piercing, etching, coloring and other processes useful to teachers of metal shops. Study of related technical information; sources, cost and specifications of equipment and supplies. Credit 3(0-6).

336. General Metals

General activities in metal work including ornamental iron, tool forging, elementary foundry, bench metal, oxacetylene welding and cutting. Study of related technical information; shop organization, courses of study, layout, equipment, operation, uses of instructional materials and supplies. Credit 3(0-6).

338. Woodturning

Thorough drill in the cutting action of turning tools and methods of holding them. Projects in spindle and in face plate turning are selected for practice. Instruction is also given in finishing and polishing on the lathe. Credit 3(0-6).

338a. Wood-turning

Instruction is given in elaborate and more intricate types of turning than are given in I. A. 338. Projects involving spherical and spiral turning are included. Credit 3(0-6).

339. Upholstery

Instruction includes caning and seat weaving method of upholstering a plain board surface, methods of fastening webbing, burlap and its uses, upholstery with springs, hard-edge upholstery, and spring edge upholstery. Credit 3(0-6).

339a. Upholstery

A continuation of 339, including construction or rebuilding of an upholstered project. Credit 3(0-6).

340. Wood Finishing

Instruction is given in the mechanical preparation of wood before staining, the preparation and use of stains and the application of different classes of commercial stains, kinds of fillers—their preparation and application, surface or refinishing coats, such as wax, oil, shellac, varnish, paint, and enamel. Credit 3(0-6).

340a. Wood Finishing

Refinishing, French polishing, and special work in finishing and polishing on the lathe. Credit 3(0-6).

341. Foundations of Industrial Education

An orientation course for industrial education freshmen. Course requirements, program operation, regulations, credits. Familiarizes the student with the underlying philosophy, basic principles, and prevailing practices and terminology in Industrial Arts and Vocational Education. Credit 3(3-0).

347. Materials, Equipment and Shop Management

The problems of equipping and arranging trades and industrial art shops and the care of tools and materials, safety and management are discussed. Credit 3(3-0).

348. Comprehensive Shop Projects

The student will be required to engage in such practical work as his individual needs seem to warrant. This work may include general construction and/or repairs, maintenance work or advanced project involving wood turning, carving, inlaying, upholstering, and wood finishing. Credit 3(0-6).

COURSES IN INDUSTRIAL EDUCATION**331. Vocational Education**

A foundation and orientation course in vocational education. Familiarizes the student with a brief historical background of concepts and developments in vocational education. Emphasis is placed upon the need of vocational education in democracy. Special consideration is given to the study of the evolution of the underlying philosophy and basic principles of vocational education, as a phase of the general education program. Credit 3(3-0).

332. Vocational Guidance (Formerly 341)

The problem of vocational guidance, its beginning, organization and administration in high schools. Special attention will be given to guidance in the Junior and Senior high school as it relates to the work of Industrial Arts. Fall. Credit 3(3-0).

341. Trade Analysis (Formerly 332)

This course gives the students a knowledge of organizing trades and industrial arts courses. Emphasis is put on the selection of a line of useful and practical projects and the grouping of these projects in the order of their learning difficulties. Spring. Credit 3(3-0).

343. Methods of Teaching Industrial Education

Fundamental factors in teaching, agencies of education, classroom management, selection of problems and projects, job sheets and lesson plans. Winter. Credit 5(5-0).

344. Observation and Practice Teaching in Industrial Education

Practical experience in conducting unit trade and industrial arts programs will be offered. Spring. Credit 5(5-0).

VOCATIONAL INDUSTRIAL EDUCATION*

This curriculum is designed for the preparation of shop and related subject teachers in secondary school programs in vocational trades and industries.

The Vocational Industrial Education curriculum leads to the degree of Bachelor of Science in Vocational Industrial Education. The student will also meet certification requirements for Industrial Arts.

*To be certified by the state department as a vocational shop and trade practice teacher, a person must present evidence of two years trade experience beyond the apprenticeship period in the trade he expects to teach.

Students desiring this degree may enter with or without practical trade experience. If he does not have the necessary trade experience when he enters he may work part of the school year or complete the work experience after completing the required residence courses.

CURRICULUM FOR VOCATIONAL INDUSTRIAL EDUCATION

(See Vocational Industrial Courses)

Freshman Year

(See First Year's Curricula of Engineering, Page 72.)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Vocational Shop Projects, V. I. Ed. 321 ..	5(2-10)	.....	.....
Advanced Voc. Projects, V. I. Ed. 322 ....	.....	5(2-10)	.....
Shop Maintenance, V. I. Ed. 323 .....	.....	.....	5(2-10)
Physics 321, 322	5(3-4)	5(3-4)	.....
†Technical Electives	5(0-10)	5(0-10)	3(0-10)
Materials of Construction, I. A. 324	3(3-0)	.....	.....
Vocational Education, Ed. 331	3(3-0)	.....	.....

Physical Education Elective .....	.....	.....	1(0-2)
Military or Air Science 221, 222, 223	2 (2-2)	2 (2-2)	2 (2-2)
Principles of Sociology, Soc. 231 .....	.....	.....	5 (5-0)
Shop Management, I. A. 347 .....	.....	.....	3 (3-0)
	_____	_____	_____
	20	20	19

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Industrial Lab., V. I. Ed. 331, 332, 333	5 (2-10)	5 (2-10)	5 (2-10)
†Technical Electives	3 (0-6)	3 (0-6)	3 (0-6)
Art 311, 312, 313	3 (0-6)	3 (0-6)	3 (0-6)
Vocational Guidance, Ed. 332 .....	.....	3 (3-0)	.....
Voice & Speech Improvement, Eng. 224	3 (3-0)	.....	.....
Adolescent Psychology, Ed. 223	3 (3-0)	.....	.....
Educational Psychology, Ed. 231 .....	.....	3 (3-0)	.....
Measurement & Evaluation, Ed. 236 .....	.....	.....	3 (3-0)
Physical Education .....	.....	.....	1 (0-2)
†Electives	3	3	4
	_____	_____	_____
	20	20	19

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
†Technical Electives	3 (0-6)	3 (0-6)	.....
Trade Analysis, Ed. 341	3 (3-0)	.....	.....
Current Problems in Ind. Ed., Ed. 502 .....	.....	3 (3-0)	.....
Methods of Teaching Ind. Ed., Ed. 343 .....	.....	.....	5 (5-0)
Observation & Practice Teaching, Ed. 344 .....	.....	.....	5 (5-0)
Principles of Secondary Ed., Ed. 237 .....	.....	3 (3-0)	.....
Economics, 231, 234	5 (5-0)	5 (5-0)	.....
Physical Education 234	5 (5-0)	.....	.....
Physical Education Electives	1 (0-2)	1 (0-2)	.....
†Electives	3	4	3
	_____	_____	_____
	20 hrs.	19 hrs.	13 hrs.

Suggested Electives

I.A. 331, 332, 333 Ed. 213, 222, 224, 225	M. E. 323, 327 C. E. 317, 318, 319 B.A. 321, 339	V. I. 340, 341, 342 Phy. Ed. 238
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†Technical Electives will be in consultation with adviser to meet state certification requirements for Industrial Arts. Minimum of nine credit hours are required in each of the following areas, wood, metal, electricity, drawing and nine credits in other elective areas. Technical Electives may include I.A. 326, 327, 328, 321, 322, 334, 335, 336; M.E. 328, 329, 330; Weld. 311, 312; Radio 311, 312, 313; Carpentry 311, 312, 313; Cabinet Making 311, 312, 313; Sheet Metal 311, 312.

†The junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with the student's adviser.

VOCATIONAL INDUSTRIAL COURSES

Vocational Industrial courses may be taken in Automobile Mechanics, Carpentry, Cabinet Making and Upholstery, Masonry, Plumbing and Steamfitting, Shoe Repair, Tailoring, Machine Shop, Radio and Television, Electric Wiring or Welding. All Vocational Industrial Courses are to be taken in one shop area.

Courses will be listed with major shop, i.e. Radio V. I. 321, Carp. V. I. 331, Weld. V. I. 332.

321. Vocational Shop Projects

Work in this course is based on individual projects adapted to the student's needs and experience. Projects selected must contain approved factors of educational significance and technical accuracy and be of a type not previously covered by the individual. Credit 5(2-10).

322. Advanced Vocational Projects

A continuation of V. I. Ed. 321 intended to increase skills in the students major field of interest. Emphasis on selection and construction of typical vocational shop projects. Credit 5(2-10).

323. Vocational Shop Maintenance

Course designed to cover study of installation, adjustments, and care of all equipment and supplies in the school and job shop. Shop and classroom equipment are planned, designed and constructed as individual or group projects. Existing shop layouts surveyed and evaluated. Operating and safety information prepared and distributed. Credit 5(2-10).

331. Industrial Laboratory (Advanced Shop Techniques)

Study and practice of administrative procedures used in school shops. Professional problems, personnel organization and management, plus forms, requisitions, orders, invoices, stock bills, inventories, buying and selection of equipment and supplies, dispensing and checking of shop tools and equipment, cost studies. Credit 5(2-10).

332. Industrial Laboratory (Advanced Shop Techniques)

Experience in the selection, organization and presentation of instructional units for vocational classes in the student's major field of interest. A survey is made with the view to organizing materials for teaching. With the survey a study is made of the history and development, sources of raw materials, methods of production and material use, labor conditions, government legislation and economic significance. Shop tests are developed and administered. Drawings and other teaching materials prepared and reproduced. 5(2-10).

333. Industrial Laboratory (Advanced Shop Techniques)

Practical work related to the major shop area. This student will be expected to contract jobs, make out work orders, estimates, cost sheets and deliver the completed job to the customer. All work will be under the supervision of the instructor. Credit 5(2-10).

341. Advanced Shop Practice

The student will engage in such practical work as his individual needs seem to warrant. This work may include advanced construction, repair or maintenance work. Credit 3(0-6).

342. Advanced Shop Practice

Continuation of V. I. Ed. 340. Credit 3(0-6).

343. Advanced Shop Practice

Continuation of V. E. Ed. 341. Credit 3(0-6).

GRADUATE PROGRAM IN INDUSTRIAL EDUCATION

Graduate work in industrial education aims to aid the promotion of industry by providing advanced technical training for those who plan to follow industrial careers and for teachers of industrial arts education or vocational industrial education. The department offers instruction for the following types of students: (1) those in the field who desire advanced training as teachers or supervisors of unit and general industrial arts shops in junior and senior high schools; and in schools of the smaller communities; (2) experienced tradesmen with the necessary teaching requirements who desire additional training in the development and conduct of programs of industrial education, especially those established under the Smith-Hughes Act; (3) teachers of related or cognate subjects; (4) others who desire further training in these fields.

A. For Teaching certificates**1. Required courses**

Ed. 601 History of American Public Education ..	Credit 3(3-0)
Ed. 605 Teaching Principles	Credit 3(3-0)
Ed. 606 The Curriculum	Credit 3(3-0)
Ed. 621, Educational Psychology	Credit 3(3-0)
Ind. Ed. 606 Research and Literature in Industrial Education	Credit 3(3-0)

2. Subject-matter courses according to certificate ..	18 Q. H.
3. Industrial Electives and Thesis	12 Q. H.

SUBJECT MATTER COURSES IN INDUSTRIAL EDUCATION

Ind. Ed. 506. Plastic Craft

Ind. Ed. 508. Handcrafts

Ind. Ed. 608. Advanced Furniture Design and Construction

Ind. Ed. 609. Electricity for Industrial Arts Teachers

Ind. Ed. 614. Advanced Drafting Techniques

Ind. Ed. 613. Comprehensive General Shop

Ind. Ed. 611. Problems in Industrial Arts

Ind. Ed. 612. Problems in Industrial Arts

NOTE: For general requirements for the Master of Science degree, see Page 70.

COURSES IN INDUSTRIAL EDUCATION**Graduates and Advanced Undergraduates****502. Teaching Problems in Industrial Education**

A general methods course for industrial education students. Problems involve analysis of objectives, curriculum content, text and reference books, teaching aids and devices, remedial instructions, cumulative records, storage systems, organizing class, teaching plans, safety programs, storage systems information about students, demonstrations. Prerequisite: Ed. 341, I.A. 347. Credit 3(3-0).

504. History and Philosophy of Industrial Education

A study of the history of Industrial Education from its earliest beginnings to the present. Special consideration is given to philosophical concepts, functions, scope and criteria for the selection and evaluation of learning experiences. Credit 3(3-0).

506. Plastic Craft

For teachers of industrial arts, arts and crafts and those interested in plastics as a hobby. Operations in plastics are analyzed and demonstrated; design, color, kinds and uses of plastics, how plastics are made and sold; vocational information. Projects suitable for class use are constructed. Credit 3(0-6).

508. Handcrafts

For teachers of Industrial Arts, arts and crafts and those interested in craft work as a hobby. Covers the materials, tools and processes used in scoutcraft, camp craft, and craft activities carried on in elementary and junior high schools that do not have specialized shops. Also of value to grade teachers who feel the necessity for more information regarding the materials, tools, and processes frequently employed in an activity-type program. Credit 3(0-6).

604. Supervision and Administration of Industrial Education

Relation of industrial education to the general curriculum and the administrative responsibilities entailed. Courses of study; relative costs; coordination problems; class and shop organization, and the development of an effective program of supervision. Selection of teachers and their improvement in-service. Of interest to school administrators, teachers of industrial arts, and vocational-industrial subjects. Credit 3(3-0).

605. Curriculum Laboratory in Industrial Education

Reviews the basic principles of the preparation of instructional materials for actual shop and classroom use. Each student, or group of students, select some significant area of instruction and develops for this area for actual use in a shop or related subject class. Courses of study that function in actual teaching situations are prepared and it is anticipated that each student will be able to take away with him a

course of study that actually meets the needs of his community. Throughout the laboratory method is used, supplemented by demonstrations, field trips, visits to industries. Opportunity is afforded to analyze existing courses of study. Credit 3(0).

606. Research and Literature in Industrial Education

Survey of printed reports; critical analysis; acquaintance with types of literature. Study of techniques of research and reporting of the results of research. Credit 3(3-0).

608. Advanced Furniture Design and Construction

Laws, theories and principles of aesthetic and structural design, planning, designing, pictorial sketching and furniture drawing. Laboratory work consist of setting up, operating and maintaining furniture production equipment, plus forms, requisitions, orders, invoices, stock bills, buying and professional problems. Prerequisite: Permission of instructor. Credit 3(0-6).

609. Electricity for Industrial Arts Teachers

For teachers and prospective teachers of Industrial Arts. Emphasis is placed on the selection and construction of projects useful in school shops, development of related information, Theory and fundamentals of Electricity and radio communication, selecting equipment and supplies, course organization and instructional materials. Credit 3(2-2).

611. Problems in Industrial Arts

This is a comprehensive course in general bookbinding. Students are taught to plan and construct projects such as binding a new book, repairing and binding on old books, binding magazines and binding photographs. Credit 3(0-6).

612. Problems in Industrial Arts

This is a comprehensive course in silk screen printing. Students are taught to plan and construct projects in silk screen printing activities. Students are taught to design and print the following: posters, season greeting cards, get well cards, covers for school papers, covers for school pamphlets and programs, school albums and gold leaf printing. Credit 3(0-6).

614. Advanced Drafting Techniques

For teachers with undergraduate preparation or trade experience. School techniques, standards, conventions, devices, experimentation in advance of opportunities offered in regular courses. Use of literature and research is expected. Credit 3(3-0).

613. Comprehensive General Shop (Formerly Problems in Industrial Arts)

An advanced course in general shop techniques. The student will engage in such practical work as meets his individual needs in indus-

trial laboratories. Problems involve experimentation and investigation in woodwork, electricity, bookbinding, metal work, leather and plastics. General Shop organization; current practices, equipment, instructional materials and procedures. Credit 3(2-2).

620. Co-operative Training

This course is designed to give the prospective teachers of vocational education a knowledge of the basic concepts and processes of co-operative work in general, with special attention to diversified occupations. Credit 3(3-0).

623. Construction and Use of Instructional Aids

The analysis of various instructional aids useful in Shop teaching. Teachers will plan, design and construct various teaching aids. Facilities for laboratory work will be provided. Credit 3(2-2).

624. Laboratory Planning for Industrial Shops

Study of the principles involved in the design, selection, location, installation, and care of equipment suitable for high school industrial arts laboratories or vocational industrial departments. Credit 3(3-0).

631. General Industrial Education Programs

Development on local, state, and national levels of day industrial schools, evening industrial schools, part-time day and evening schools. Their organization types, courses of study, scope of movement, study of special student groups, fees and charges, buildings and equipment. Credit 3(3-0).

632. Test in Industrial Subjects

Study and application of principles of achievement test construction to shop and drawing subjects; evaluation of results. Credit 3(3-0).

DEPARTMENT OF MATHEMATICS

Objectives of the Department of Mathematics are as follows:

1. To review and strengthen students in the basic fundamentals of mathematics in order that they may be adequately equipped for expressing or interpreting quantitative ideas in this and related areas.
2. To provide an opportunity for all students to increase their sense of utility of the subject matter by emphasizing the application of mathematical processes to problems involving personal and social living.
3. To equip those students whose interests and abilities lead to further study, research and, or technology with an adequate mathematical background.

4. To contribute to the teaching efficiency of prospective secondary school mathematics teachers by insuring mastery of essential subject-matter materials, and the development of a reasonable degree of skill, accuracy and speed in dealing with these materials.

All freshmen are required to take a placement test in mathematics. Those failing this test must register for Mathematics 309.

Mathematics majors and minors are required to have an average of "B" or better in their mathematics courses.

Those persons pursuing mathematics as a major should take Mathematics 313 in their freshman year and Physics 323 during their sophomore year.

The following is suggested for those desiring a major and is recommended for those planning to do research work, graduate study or teach.

Requirements for the major (in addition to the three freshmen mathematics courses) :

Math. 321, 322, 323. Math. 314, 316, 331.

Suggested electives in mathematics may be taken from the following and from any of the advanced mathematics courses.

Math. 315, 318, 324. M. E. 311, 331.

MATHEMATICS

Engineering Mathematics

(See First Year's Curricula of Engineering, Page 72.)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 321, 322, 323	5 (5-0)	5 (5-0)	5 (5-0)
Mil. Sci. or Air Science	2 (2-2)	2 (2-2)	2 (2-2)
French	5 (5-0)	5 (5-0)	5 (5-0)
Physics 321, 322, 323	5 (3-4)	5 (3-4)	5 (3-4)
	<hr/>	<hr/>	<hr/>
	17	17	17

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 318, 331, 501	5 (5-0)	5 (5-0)	5 (5-0)
M. E. 331, 332, 333	5 (5-0)	5 (5-0)	5 (5-0)
Physics 332, 333, 338	3 (3-0)	3 (3-0)	5 (5-0)
Electives	5	5	3
	<hr/>	<hr/>	<hr/>
	18	18	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 504 .....	.....	.....	5(5-0)
Math. 324 .....	.....	.....	3(1-4)
Chemistry 141, 142	5(3-6)	5(3-6)	.....
Physics 334, 335	3(1-4)	3(1-4)	.....
Math. 314, 316 .....	.....	5(5-0)	5(5-0)
B. A. 335	5(5-0)	.....	.....
Electives	5	5	3
	_____	_____	_____
			16

Note: The junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with the student's adviser.

COURSES IN MATHEMATICS**309. Remedial Mathematics**

This course is designed to strengthen and review the student in the fundamentals of arithmetic, plane geometry, and algebra. Students who fail to pass the placement test are required to pass this course in addition to the regular mathematics requirements. Credit 3(3-0).

311. College Algebra

Review of elementary topics, such as factoring, fractions, simple equations, exponents, and radicals. Other topics studied are quadratics, simultaneous quadratic equations, logarithms, binomial theorem progression, determinants and permutation. Prerequisite: High School Algebra. Credit 5(5-0).

312. Trigonometry

Functions of angles and their practical applications to solution of problems, relations of logarithms of numbers and of the trigonometric functions, solutions of the right and oblique triangles by logarithms. Prerequisites: College Algebra and Plane Geometry. Credit 5(5-0).

313. Analytic Geometry

A thorough study of cartesian co-ordinates, curves, loci, straight line, circle, polar co-ordinates and conic sections completes the plane analytic geometry. Co-ordinates in space, loci, the plane and the straight line completes the course. Prerequisite: Math. 312. Credit 5(5-0).

314. History of Mathematics

The History of Mathematics: This course is designed as an aid in the preparation of teachers of mathematics and includes a survey of the development of mathematics by chronological periods, with biographical references, illustrations of national and racial achievements, and discussions of the evolution of certain important topics of elementary mathematics. Credit 5(5-0).

315. Mathematics of Business

A basic course offered primarily for students of Business Administration. A study of elementary principles of mathematics as applied to investments, sinking funds, annuities, insurance, etc. The course is begun with a thorough study of interests—simple and compound. Credit 5(5-0).

316. Theory of Equations

Methods of solving cubics quartics and other higher algebraic equations. Methods of approximating roots, systems of equations, elements of determinants. Prerequisite: Math. 313. Credit 5(5-0).

318. Elementary Mathematical Statistics

A general course covering the use of graphs, frequency distributions, averages, measures of dispersion, etc., with an introduction to sampling and correlation; a basic course for all fields of application. Prerequisites: Math. 311, 315 and approval of instructor. Credit 5(5-0).

321. Differential Calculus

The fundamentals of differential calculus; maxima and minima; rates; curve tracing and application of derivatives, etc. Prerequisite: Math. 313. Credit 5(5-0).

322. Integral Calculus

Fundamentals of integral calculus, application of integrals to measurements of arcs, areas, and volumes, etc. Prerequisite: Math. 321. Credit 5(5-0).

323. Differential and Integral Calculus

A continuation of integral calculus. Solution of equations, application of integrals, center of gravity, movement of inertia, double and triple integration. Prerequisite: Math. 322. Credit 5(5-0).

324. Surveying

The methods of using the compass, transit, tape and level in making plane surveys. Lectures and field work. Elementary stadia work. Prerequisite: Math. 312. Credit 3(1-4).

This course will not serve as a prerequisite for any other courses in mathematics. Prerequisite: Math. 312. Credit 5(5-0).

326. Mechanics (Same as M. E. 331)

Prerequisite: Math. 321. Credit 5(5-0).

331. Differential Equations

Solution of standard types of differential equations. Emphasis given on application to numerous examples in electricity and mechanics. Prerequisite: Math. 323. Credit 5(5-0).

Advanced Undergraduates and Graduates**501. Vector Analysis**

A study of the processes of vector analysis, with a treatment of the vector functions and operations as applied in theoretical work. Prerequisite: Math. 323. Credit 5(5-0).

502. Mathematics of Life Insurance

Probability, mortality tables, life insurance, annuities, endowments, computation of net premiums, evaluation of policies, construction and use of tables. Credit 3(3-0).

503. Integrated Mathematics

A study of the logical development of the number system, including the complex numbers, the theory of algebra, trigonometry, analytic geometry, differentiation, integration and the regular solids, hyperbolic functions and the theory of constructions with straight edge and compasses. The course provides a mathematical background for mathematics teachers in the senior high school, junior college and technical school. It also shows how trigonometry, algebra, analytic geometry and elementary calculus can be integrated into a unified course. Prerequisite: Calculus 322. Credit 3(3-0).

504. Numerical Computation

Interpolation, numerical solution of equations, approximations, numerical integration, construction of tables. Credit 3(3-0).

506. Advanced Calculus

Review of differentiation and integration, approximation of integrals, partial derivatives, line integrals, integral theorems, applications to geometry, physics and mechanics. Credit 5(5-0).

507. Mathematical Statistics

Averages, moments, correlation, probability, the normal and Poisson's distribution, the Gram-Charlier series, the distribution of statistics, sampling of populations, the Lewis theory, Sheppard's corrections, maximum likelihood, and other selected topics. Credit 3(3-0).

603. Differential Equations

Formulation of practical problems as solutions of differential equations, method of solving type forms, systems of equations, singular solutions, methods of approximation, and introduction to partial differential equation. Credit 5(5-0).

DEPARTMENT OF MECHANICAL ENGINEERING

This curriculum offers a broad training in the scientific principles in the field of mechanical engineering and correlates this training with applications to the specific areas of machine design, heat power, heating and ventilation, refrigeration, thermodynamics, industrial management, and manufacturing problems.

Lectures and class instruction are supplemented by laboratory investigations designed to emphasize the engineering and economic principles involved. Students admitted without credit in solid geometry will be required to take it during the freshman year without credit.

CURRICULUM

Freshman Year

(See First Year's Curricula of Engineering, Page 72.)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 321, 322, 323	5 (3-4)	5 (3-4)	5 (3-4)
Mathematics 321, 322, 323	5 (5-0)	5 (5-0)	5 (5-0)
Military Science 221, 222, 223 or			
Air Science 221, 222, 223	2 (2-2)	2 (2-2)	2 (2-2)
Machine Shop Practice, M. E. 328, 329, 330	2 (0-4)	2 (0-4)	2 (0-4)
Mechanical Drawing 323	3 (0-6)	.....	.....
Engineering Problems M. E. 318, 319	1 (0-2)	1 (0-2)	.....
Mechanism, M. E. 321 .....	.....	.....	3 (2-2)
Pattern Making, M. E. 317	3 (0-6)	.....	.....
Economics 231 .....	.....	5 (5-0)	.....
Surveying, Math. 324 .....	.....	.....	3 (1-4)
	21	20	20

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Electrical Engineering 321, 322, 323	5 (3-4)	5 (3-4)	5 (3-4)
Mechanics, M. E. 331, 332, 333	5 (5-0)	5 (5-0)	5 (5-0)
Heat Power Engineering, M. E. 336 .....	.....	.....	3 (3-0)
Heating and Ventilating, M. E. 334, 335 ..	3 (3-0)	3 (3-0)	.....
Thermodynamics, M. E. 325, 326	3 (3-0)	3 (3-0)	.....
Mech. Engineering Laboratory I, M. E. 351, 352, 353	1 (0-3)	1 (0-3)	1 (0-3)
Electives	3	3	3
	20	20	17

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Machine Design, M. E. 341, 342, 343	5 (5-0)	5 (3-4)	5 (3-4)
Heat Power Engineering, M. E. 344, 345 ..	3 (3-0)	3 (3-0)	.....
Hydraulics, M. E. 337 .....	.....	.....	3 (3-0)
Materials of Construction, I. A. 324	3 (3-0)	.....	.....
Contracts and Specifications, M. E. 327 ..	.....	.....	3 (3-0)
Internal Combustion Engines, M. E. 338 ..	.....	5 (5-0)	.....
Mechanical Engineering Laboratory II, M. E. 354, 355, 356	1 (0-3)	1 (0-3)	1 (0-3)
Testing Materials Laboratory, M. E. 346 ..	2 (0-4)	.....	.....
Metallurgy, M. E. 339	3 (3-0)	.....	.....
Economics 234 .....	.....	.....	5 (5-0)
Electives	3	4	3
	20 hrs.	18 hrs.	20 hrs.

Suggested Electives

Commercial Law, B. A. 335
 Differential Equations, Math, 331
 Economics, Ec. 232
 Structures, A. E. 341
 Hydraulic Machinery, M. E. 347

*Note: Junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with student's adviser.

DESCRIPTION OF COURSES**311. Mechanical Drawing**

Instruction in proper use of drafting instruments and materials. Lettering. Applied Geometry. Emphasis placed upon accuracy and neatness. Credit 3(0-6).

312. Mechanical Drawing

Continuation of M. E. 311. Fundamentals required for machine drawing including applied Geometry, Orthographic projection. Pictorial representation including isometric and oblique drawing. Sections. Prerequisite: M. E. 311. Credit 3(0-6).

314. Descriptive Geometry

Theory of projection: Solution of Theoretical and practical problems involving size, shape, and relative position of common geometric magnitudes such as points, lines, planes, curved surfaces and solids. Surface development and intersection. Credit 3(1-4).

317. Pattern Making

Care and use of tools, principles of planning, squaring and laying out work. Laboratory practices and modern methods of pattern making. Wood used, glued joints, methods of building up draft shrinkage, coating and storage. Small individual projects. Credit 3(0-6).

318. Engineering Problems

Introduction to the fields of engineering. Methods of analysis and solution of selected elementary engineering problems. Prerequisites: One entrance unit in Plane Geometry, one-half unit in Solid Geometry and Math. 312. Credit 1(0-2).

319. Engineering Problems

Continuation of M. E. 318, with emphasis on systematic procedure and accuracy in making and checking computations; use of slide-rule and tables. Prerequisite: M. E. 318. Credit 1(0-2).

321. Mechanism

A study of various types of mechanisms employed in the design of machines such as linkages, belting, cams and followers, gears, cones and wheel trains. Prerequisite: M. E. 323, Math. 313, Physics 321. Credit 3(2-2).

323. Mechanical Drawing

Drawing for the shop. Metal fastenings, springs, gears, detail and assembly drawings, tracings, methods of reproducing drawings. Prerequisite: M. E. 314. Credit 3(0-6).

325. Thermodynamics I (Same as Physics 332)**326. Thermodynamics II (Same as Physics 333)****327. Contracts and Specifications**

Elementary principles of contracts involving bids and bidders; methods of payment for contracts and extra work; preparation and writing of specifications. Prerequisite: Eng. 213. Credit 3(3-0).

328. Machine Shop Practice

A study of the theory, construction and operation of various machine tools, such as lathes, milling machines, shapers and the use of special tools and measuring instruments. Prerequisite: M. E. 311. Credit 2(0-4).

329. Machine Shop Practice

Construction of some project requiring the use of various machine tools and measuring instruments. Prerequisite: M. E. 328. Credit 2(0-4).

330. Machine Shop Practice

Continuation of M. E. 329. Credit 2(0-4).

331. Mechanics

Static, analytical and graphic treatment of concurrent, nonconcurrent systems of coplanar and non-coplanar forces, and parallel forces, couples, stresses in frames and trusses. Distribution forces, center of gravity, moment of inertia and radii of gyration of plane areas and solids. Prerequisite: Physics 321, Math. 323. Credit 5(5-0).

332. Mechanics

Dynamics and Kinetics, rectilinear and curvilinear motion of a particle, relative velocities and acceleration, rotary motion of a body, work and energy, plane motion of a body, impact, moment of momentum. Prerequisite: M. E. 331. Credit 5(5-0).

333. Strength of Materials

Shear and bending moment diagrams, stresses in beams, shafts, and columns. Combined stresses, deflection in beams, reinforced concrete beams, fiber stresses in beams and their distribution. Tension, compression and torsion. Prerequisite: M. E. 332. Credit 5(5-0).

334. Heating and Ventilating

A study of the theory, design and installation of hot air, direct and indirect steam, hot water and fan heating systems; central heating and temperature control. Computations for heat losses and size of principal equipment. Layout of piping, ducts and auxiliary apparatus. Lectures, recitations. Credit 3(3-0).

335. Heating and Ventilating

Continuation of 334 with special attention given to air analysis and air conditioning. Discussion of methods of air refrigeration, distribution, humidity control and conditioning equipment. Lectures, recitations. Credit 3(3-0).

336. Heat Power Engineering

A description and analytic study of the principles involved in the application and utilization of heat in the steam boiler, steam engine, steam turbine and power plant auxiliaries, fuels and combustion. Prerequisite: M. E. 326. Credit 3(3-0).

337. Hydraulics

Elementary principles of hydrostatics and hydrokinetics; laws of statics; dynamic pressure, flow of water through orifices, tubes, nozzles, weirs, pipe lines and open channels, hydraulic friction and accompanying losses; water measurements in pipes and open channels. Prerequisite: M. E. 332; Physics 322. Credit 3(3-0).

338. Internal and Combustion Engines

A study of the Otto and Diesel type of engines and their auxiliaries; fuel performance; design, applications and economics. Discussions, problems. Prerequisite: Physics 332. Credit 5(5-0).

339. Metallurgy

Production of refined ferrous and non-ferrous metals from their ores; properties of metals and alloys as related to structure and treatment; heat treatment; microscopic examination; casting, shaping and welding. Prerequisite: Chem. 113. Credit 3(3-0).

341. Machine Design

A study of the properties of materials, the stresses in machine parts and procedures in design calculations. Lectures, recitations and problems. Prerequisite: M. E. 321 and 333. Credit 5(5-0).

342. Machine Design

Design of machine elements involving a consideration of static and dynamic forces, critical speeds and the application of the theories of strength and resistance of materials. Lectures, recitations and design periods. Prerequisite: M. E. 341. Credit 5(3-4).

343. Machine Design

A study of the design of gears and gear trains, shafts, screws, springs, clutches and castings. Prerequisite: M. E. 342. Credit 5(3-4).

344. Heat Power Engineering

A study of modern central and isolated power plants, fuels, combustion, boilers, settings, stoker, fuel and ash conveying systems and experimental tests. Prerequisite: M. E. 336. Credit 3(3-0).

345. Heat Power Engineering

Continuation of M. E. 344 with special attention given to steam engines, steam turbines, condensers, pumps, economics of power plants and experimental tests on various plant auxiliaries. Credit 3(3-0).

346. Testing Materials Laboratory

Laboratory work devoted to experiments and standards tests on various engineering materials, including steel, iron, wood, brick, sand, gravel, cement and concrete. Prerequisite: M. E. 333. Credit 2(0-4).

347. Hydraulic Machinery

A study of the theory, construction and operating characteristics of the principal types of hydraulic machinery. Lectures, recitations problems. Credit 3(3-0).

351, 352, 353. Mechanical Engineering Laboratory I

Calibrating pressure, speed, temperature and power measuring instruments; the testing of fuels, lubricants, pumps, compressors, heating, ventilating and refrigerating equipment. Prerequisites: M. E. 319, Physics 323. Co-requisites: M. E. 325, 326, 336. Credit 1(0-3), 1(0-3), 1(0-3).

354, 355, 356. Mechanical Engineering Laboratory II

Advanced study and tests in the areas of power plants, heating and air conditioning, metallurgy, fluid flow, compressed air, fuels and combustion, lubricants, steam engines, turbines and internal combustion engines. Prerequisite: M. E. 353. Co-requisites: M. E. 344, 345. Credit 1(0-3), 1(0-3), 1(0-3).

DEPARTMENT OF MUSIC

Music is recognized as an important part of life. The principal and ultimate aim of our courses is directed toward the development of interest and a sincere desire to understand and to appreciate more fully all types of music. The curriculum is designed to give the student a thorough training so that he will be prepared to teach music, to continue the study of music after the completion of these courses, and to be an influencing factor in the cultural development of his community.

Suggested Outline of Courses for Majors and Minors in Band Music

Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 311, 312, College Algebra, Trig.	5 (5-0)	5 (5-0)	.....
Mus. 227-1a, 227-1b, 227-1c, Piano Class ..	1 (0-2)	1 (0-2)	1 (0-2)
Mus. 240-2a, 240-2b, 240-2c, Senior Band ..	1 (0-5)	1 (0-5)	1 (0-5)
Eng. 211, 212, 213, Grammar and Comp. ...	5 (5-0)	5 (5-0)	5 (5-0)
Fr. 211, 212, 213, Beginners French	5 (5-0)	5 (5-0)	5 (5-0)
Bot. 111 or Zool. 111 .....	.....	.....	5 (3-4)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mus. 221, 222, 223, History of Music	3 (3-0)	3 (3-0)	3 (3-0)
Mus. 224, 225, 226, Harmony	3 (3-0)	3 (3-0)	3 (3-0)
Mus. 227-2a, 227-2b, 227-2c, Advanced Piano Class	1 (0-2)	1 (0-2)	1 (0-2)
Mus. 228-1a, 228-1b, 228-1c, Major Instrument	2 (0-5)	2 (0-5)	2 (0-5)
Mus. 228-2a, 240-2b, 240-2c, Senior Band ..	1 (0-5)	1 (0-5)	1 (0-5)
History 210, 213, 221	5 (5-0)	5 (5-0)	5 (5-0)
Phy. 311, 312	5 (4-2)	5 (4-2)	.....
Vocation .....	.....	.....	3 (0-6)

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mus. 217 Percussion Instruments	2 (1-2)	.....	.....
Mus. 218 Woodwind Instruments .....	.....	2 (1-2)	.....
Mus. 219 Brass Instruments .....	.....	.....	2 (1-2)
Mus. 228-2a, 228-2b, 228-2c Major Inst.	2 (0-5)	2 (0-5)	2 (0-5)
Mus. 229a, 229b, 229c Minor Instrument	1½ (0-3)	1½ (0-3)	1½ (0-3)
Mus. 236 Public School Methods	3 (3-0)	.....	.....
Mus. 240-3a, 240-3b, 240-3c Senior Band ..	1 (0-5)	1 (0-5)	1 (0-5)
Minor or elective (Education)	8 (8-0)	8 (8-0)	8 (8-0)

Senior Year

<i>Course and No.</i>		<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mus. 228-3a, 228-3b, 228-3c	Major Inst. . .	2(0-2)	2(0-2)	2(0-2)
Mus. 244, Band Technics		5(5-0)	.....	.....
Mus. 247, Band Arranging . . . . .		.....	5(5-0)	.....
Minor or elective (Education)		10(10-2)	7(7-0)	9(9-0)

This outline of courses should be worked in with the required courses for all students in the School of Education and Science. All students should remember that most courses in music are in sequence, and each sequence should be started in the Fall quarter.

It should be noted that all majors and minors in band music will be required to play in one of the bands throughout the four years, including participation in the Senior Band for one year. Participation on student recitals is also a requirement.

A course in instrumental music designed to prepare students to organize and train high school bands is available to qualified persons. Those interested should apply to the band director and be prepared to take a preliminary examination upon entering.

All persons interested in either a major or a minor in band music are required to study piano for two years and complete instruction upon both a major and a minor instrument.

COURSES OF INSTRUCTION

MUSIC APPRECIATION AND HISTORY

Six hours of Music Appreciation or Art Appreciation are required in the School of Education and Science. These must be taken in the Freshman year.

211. Music Appreciation

This course aims to provide a general background for the listener and includes a study of rhythm, harmony, melody, simple form, vocal music, incidental music and the orchestra. Credit 2(1-2).

212. Music Appreciation

This course covers a study of classicism and romanticism, program and descriptive music, sonata form and the symphony. Credit 2(1-2).

213. Music Appreciation

The course deals with the more difficult aspects of listening: chamber music, the violin sonata, Bach and the polyphonic style, Impressionism, Expressionism, and modern music. Credit 2(1-2).

221. History and Appreciation of Music

Music of the ancient Greeks and the medieval period is carefully studied and examined. Credit 3(3-0).

222. History and Appreciation of Music

Music of the seventeenth, eighteenth and nineteenth centuries is carefully studied and examined. Credit 3(3-0).

223. History and Appreciation of Music

Music of the Neo-Romantic and Modern Periods is carefully studied and examined. Credit 3(3-0).

THEORY**224. Harmony**

This course includes the study of intervals, triads, and an introduction to keyboard harmony, and exercises in ear training and dictation. Credit 5(5-0).

225. Harmony

This course is a study of implied modulation, three part vocal writing, the minor mode and a continuation of keyboard harmony and ear training. Credit 3(3-0).

226. Harmony

This is a continuation of 225, introducing elements of composition, as well as providing advanced work in ear training and dictation. Credit 3(3-0).

247. Band Arranging

This course includes practical study of all instruments, the art of writing for small combinations of instruments, the art of sectional writing for instruments, and the art of scoring for full band. As a class project one composition will be scored for full band. Credit 5(5-0).

MUSIC EDUCATION**209. Solfeggio**

This course is learning to sing simple melodies at sight. Credit 1(0-2).

217. Percussion Instruments

The percussion instruments are studied, and the proper methods for teaching these instruments are carefully analyzed. Some proficiency on at least one instrument of this section is required of each student. Credit 2(1-2).

218. Woodwind Instruments

The woodwind instruments are studied, and the proper methods for teaching these instruments are carefully analyzed. Some proficiency on at least one instrument of this section is required of each student. Credit 2(1-2).

219. Brass Instruments

The brass instruments are studied, and the proper methods for teaching these instruments are carefully analyzed. Some proficiency on at least one instrument of this section is required of each student. Credit 2(1-2).

235. Public School Methods

This course deals with the materials and methods for teaching in the elementary schools. Credit 5(5-0).

236. Public School Methods

This is a comprehensive course covering materials and methods in the public schools. Credit 3(3-0).

237. Conducting

This course includes the study of the technique of the baton and the study of the different forms of conducting. Some time is devoted to the problems of score-reading. An opportunity is given for practical experience in conducting both vocal and instrumental groups. Credit 3(1-4).

244. Band Techniques

The student learns about school band organization and administration, band rehearsal techniques, drilling, tuning, motivation, student practice, special problems relating to the school band, survey of recognized methods, materials, and literature. Credit 5(5-0).

246-1abc, 2abc, 3abc, 4abc. Voice Class

This course is open to qualified persons who wish to know the proper use of the voice. It is designed to help the potential classroom teacher who may assist with vocal music, and for the student who wishes to serve as a soloist in a community, church or civic choral group. The principles of breathing and breath control are stressed. Easy songs are sung in Italian, English and the other languages. Credit 2(0-4).

APPLIED MUSIC

In conference with band instructors, each music major will select a major instrument and two minor instruments. One of the minor instruments should be piano if the student has not had such study. Thirty-two quarter hours of applied music are required for State of North Carolina certification and these instruments should be started not later than the sophomore year. Music 217, 218, 219 may be included in the total number of hours for credit. Major instruments must be studied for three years, and minor instruments for five quarters.

Definition of Major Courses—All major courses give two hours of credit each quarter. A major course is designed to give intensive and extensive training in an instrument and includes an individual lesson

of one hour weekly, or the equivalent in smaller groups, or the combination of the two plans, as the character of the work is best served. Participation in the regular Senior ensemble organizations, with or without credit, and a minimum of one and one-half hours daily practice are required. The following instruments are suitable for major concentration:

MAJOR INSTRUMENTS

Piano	Saxophone	Trombone—Baritone
Flute	Cornet—Trumpet	Tuba—Bass
Clarinet	French Horn	Percussion

NOTE: All examinations in major instruments are by jury composed of faculty.

Definition of Minor Courses—All minor courses give one and one-half hours credit each quarter. A minor instrument course is to give those students whose major instrument is in another family, a practical approach to an additional instrument, preferably in a different instrument family. These courses give less credit than major courses and do not attempt to follow the same sequence or intensity of study as required by the major courses. Instruction in minor courses include an individual lesson of one-half hour each week or the equivalent in small groups, or the combination of the two plans, as the character of the work is best served. One hour of daily practice is required. The following courses and instruments are suitable for minor concentration:

MINOR INSTRUMENTS

Piano	Bass Viol	Saxophone
Organ	Harp	Cornet—Trumpet
Violin	Flute	French Horn
Viola	Oboe	Trombone—Baritone
Cello	Bassoon	Tuba—Bass
	Clarinet	Percussion

227-1abc, 2abc. Piano Classes

These courses are designed for band majors and minors. Simple compositions, scales and arpeggios are studied to facilitate the study of theory and harmony and the playing of simple accompaniments. Credit 1 (0-2).

228-1abc, 2abc, 3abc. Major Instruments

In conference with band instructors, each music major will select a major instrument. Proficiency on major instruments will be determined by lessons and by regular appearance of student recitals. Credit 2 (0-5).

229abc. Minor Instruments

In conference with band instructors, each music major will select a minor instrument. Credit 1½ (0-3).

ENSEMBLES**210abc. Beginners' Band**

This course is primarily for any student who desires to learn to play an instrument or for minors in Band Music who desire to change instruments after entering college. Credit 1(0-5).

220abc. Intermediate Band

This band is primarily for those students who have passed Music 210abc, or have had less than three years of instrumental experience, or who have been advised to join by the band director. Credit 1(0-5).

240-1abc. Senior Band

This band is primarily for students planning to major or minor in band music and is open to qualified freshmen who have had at least two years of previous training in a band instrument. This is the College Concert and Marching Band, and regular attendance is required at all rehearsals and performances. Credit 1(0-5) each quarter.

240-2abc. Senior Band

This band is for qualified sophomores. Credit 1(0-5) each quarter.

240-3abc. Senior Band

This band is for qualified juniors. Credit 1(0-5) each quarter.

240-4abc. Senior Band

This band is for qualified seniors. Credit 1(0-5) each quarter.

Music 241-1abc, 2abc, 3abc, 4abc. Women's Band

This band is primarily for women students who have had previous experience and training on a band instrument. The band supplements the Marching Band in the fall quarter and prepares minor concert appearances during the winter and spring quarters. Regular attendance is required at all rehearsals and performances. May be taken repeatedly for credit. Credit 1(0-5).

248-1abc, 2abc, 3abc, 4abc. Choir

Representative sacred and secular choral masterpieces from the sixteenth century to the present day are studied and presented. The choir assists in the religious and civic life of the college community. Credit 1(0-4) each quarter.

249-1abc, 2abc, 3abc, 4abc. Men's Glee Club

The best in choral literature for male voices is studied and presented. Credit $\frac{1}{2}$ (0-2) each quarter.

PHILOSOPHY AND RELIGION**(Philosophy)****Philosophy 211. Introduction to Philosophy.**

An introductory course covering such topics as theories of reality, the nature of mind and knowledge, and the higher values of life. Credit 3(3-0).

Philosophy 212. Ethics

This course deals with the study of moral origins and the interpretation of standards of value in private, business and public life. Credit 3(3-0).

Philosophy 213. Philosophy of Religion

An introduction to the study of man's quest for wisdom about religious matters. An examination of conceptions of God, ways of knowing God, problems of belief in God, good and evil, prayer, sin and suffering, and immortality. Credit 3(3-0).

Philosophy 222. Logic

An introductory study of rules of correct thinking and of their application to practical affairs; a consideration of topics of meaning, induction and deduction, inference, and causation. Credit 3(3-0).

Philosophy 223. Survey of Western Thought

An introductory examination of systems of philosophic thought of selected outstanding representatives of the classical, medieval, and modern periods in philosophy. Prerequisite: One course in Philosophy or consent of the instructor. Credit 3(3-0).

(Religion)**Religion 211. Introduction to Bible Study**

An introductory course in the history, literature and principal ideas of the Bible. Credit 3(3-0).

Religion 212. Orientation in the Study of Religion

An examination of the nature, function, value, and basic concepts of religion. Credit 3(3-0).

Religion 213. The Church in Contemporary Society

A brief survey of the development of the Christian church with emphasis upon the role of organized religion in contemporary affairs. Credit 3(3-0).

DEPARTMENT OF PHYSICAL EDUCATION

The general physical education program aims to promote the health, physical and mental efficiency of each student enrolled in the college and to provide carry-over interests and activities for all. A Health examination is given to each new student before he matriculates so as to determine his needs in physical education.

Unless officially excused by the college physician two class periods each week are required of all students. Juniors and seniors are permitted to elect their activity classes if all of the health, posture, and credit requirements have been met.

Students must be prepared, upon matriculation, to place their orders for the activity uniforms, the approximate cost for which is \$12.00 for men and \$8.00 for women.

INTRAMURALS

A program of intramural activities is conducted, on an elective basis, for all students. Schedules and tournaments are arranged, and equipment is made available by the physical education majors.

VARSITY ATHLETICS

The intercollegiate athletic program is under the supervision and direction of the Athletic Committee, consisting of faculty, alumni and students. The student members are appointed to the committee by the college president, on the basis of merit and achievement. The sports included in the program are: football, basketball, baseball, track, boxing and tennis. The college is a member of the Central Intercollegiate Athletic Association, the National Association of Intercollegiate Athletics, and the National Collegiate Athletic Association, and is subject to the rules and regulations of those bodies.

The Varsity letter shall be awarded by the Athletic Committee, upon recommendation of the coaching staff, to members of the football and basketball teams who have participated in a minimum of one-half of the total number of periods played in the intercollegiate competition. In baseball, participation in one-half of the total number of innings played is required with the exception of: for pitchers who must have participated in at least one-fourth of the total number of innings played in intercollegiate competition. In the remaining sports, the award is made to the athlete who participates through the season with credit, with a provision that: to members of the track team who win two points in the conference or intersectional meets; to members of the tennis team who have won at least two matches in the conference tournament; and, to members of the boxing team who have won at least two matches in the conference tournament. The Varsity letter is awarded to members of the cheering squad who serve with credit.

SERVICE COURSES IN HEALTH AND PHYSICAL EDUCATION

The general courses in physical education, based upon the physical examination given at the beginning of the year, are required of all freshmen and sophomore men and women. A wide variety of athletic sports and games is provided to meet the needs and interests of the student and to acquaint him with many activities in the field of physical education. Special attention is given toward developing skills and an understanding of rules.

COURSES FOR WOMEN**Freshman**

210a. Soccer and Speedball. Fall. Credit 1(0-2).
210b. Basketball. Winter. Credit 1(0-2).
210c. Softball and Volleyball. Spring. Credit 1(0-2).
213. Personal Hygiene. (Required of Freshmen).

Consideration is given to personal and mental hygiene with a view to establishing in the student a basis for positive health and efficiency through the development of desirable health habits, knowledge and attitudes. Credit 1(0-2).

215a,b,c. Individual Physical Education Activities

(Fall, Winter, Spring.) Special activities designed for those women whose examinations show that they are unable to participate in regular physical education classes. Credit 1(0-2) each quarter.

219. Aquatics. (Required of Freshmen).

This course is designed to enable the student to acquire the elementary skills outlined in the American Red Cross standards for beginning swimmers. Fall, winter, spring. Credit 1(0-2).

Sophomore

220a. Hockey. Fall. Credit 1(0-2).
220b. Stunts and Tumbling. Winter. Credit 1(0-2).
220c. Tennis and Archery. Spring. Credit 1(0-2).
216a,b,c.

A continuation of the course 215a, b, and c. (Fall, Winter, Spring). Credit 1(0-2) each quarter.

Electives

211t. Tap Dancing. Credit 1(0-2).

212f. Folk Dancing. Credit 1(0-2).

217a. The Modern Dance. (For Beginners.) Credit 1(0-2).

217b. The Modern Dance. (For Intermediates.) Credit 1(0-2).

217c. The Modern Dance. (For Advanced Students.) Credit 1(0-2).

208. First Aid. Credit 1(0-2).

234. Personal and Community Health. Credit 5(5-0).

COURSES FOR MEN**Freshman**

210a. Speedball. Fall. Credit 1(0-2).

210b. Stunts and Tumbling. Winter. Credit 1(0-2).

210c. Volleyball, Track and Field. Spring. Credit 1(0-2).

213. Personal Hygiene. (Required of all Freshmen.) Credit 1(1-0).

215a,b,c. Individual Physical Education Activities

(Fall, Winter, Spring.) Special activities designed for those men in whose examinations show that they are unable to participate in the regular physical education classes. Credit 1(0-2).

219. Aquatics. (Required of Freshmen).

This course is designed to enable the student to acquire the elementary skills outlined in the American Red Cross standards for beginning swimmers. (Fall, Winter, Spring.) Credit 1(0-2).

Sophomore

220a. Touch Football. Fall. Credit 1(0-2).

220b. Basketball and Advanced Tumbling. Winter. Credit 1(0-2).

220c. Softball and Badminton. Spring. Credit 1(0-2).

216a,b,c. A continuation of the course 215a,b,c. (Fall, Winter, Spring) Credit 1(0-2).

Electives

213t. Tennis and Archery. Credit 1(0-2).

226a. Boxing. Credit 1(0-2).

208. First Aid. Credit 1(0-2).

208. First Aid. (Men and Women.)

Courses designed for students other than those majoring in physical education. First Aid to the injured in the home, school and community. A consideration of First Aid practices with laboratory experience as well as lecture and discussion opportunities. Successful completion of this course leads to the Red Cross Standard certificate in First Aid. Credit 1(0-2).

Other Courses**227. Principles, Practices, and Procedures in Physical Education**

A study is made of the underlying principles, methods and procedures of physical education for elementary school teachers. The course provides practice in the utilization of materials and techniques for teaching graded games, stunts, rhythms, and similar activities on the elementary level. Credit 3(2-2).

228. Principles, Practices, and Procedures in Health Education

A study of the basic principles, methods and procedures for developing a health education program in the elementary school. The course provides theory and practice in the organization and presentation of school health education with special emphasis upon instructional materials and techniques for the elementary school teacher. Credit 3(2-2).

234. Personal and Community Health (Men and Women.)

This course aims to establish within the individual a basis for positive health and effective living through a consideration of those factors which effect his personal and health efficiency. Consideration is also given to the field of public health as it affects the community, with special emphasis being placed on ways in which the individual and community agencies may improve and maintain group health. Credit 5(5-0).

REQUIREMENTS FOR MINOR IN PHYSICAL EDUCATION**Theory Courses**

243. The Teaching of Physical Education	5 hours
244. The Teaching of Health Education	3 hours
245. History and Principles of Physical Education	5 hours
249. Administration of Health and Phy. Edu.	5 hours

Activity and Coaching Courses

213is. Individual Sports	1 hour
214. Rhythms	1 hour
217. The Modern Dance (Women)	1 hour
218. Basketball, Stunts and Tumbling	1 hour
219a. Swimming, Track and Field	1 hour
225. Coaching of Football (Men)	2 hours
225a. Coaching of Softball and Volleyball (Women)	2 hours
225c. The Teaching of Individual Sports	2 hours

225d. Coaching of Track and Baseball (Men) 3 hours
 225e. Teaching of Social, Tap and Square Dancing (Women) .. 2 hours
 226. Group Games, Volleyball and Football or Soccer 1 hour
 229a. Combatives, and Baseball (Men) 1 hour

Unless indicated otherwise, all courses will be taken by men and women.

MAJOR CURRICULUM IN PHYSICAL EDUCATION

The professional curriculum in physical education is designed to prepare students to become teachers of health and physical education, and athletic coaches. The physical education teacher is generally expected to teach other courses. It is, therefore, recommended that the student, upon counsel of his adviser, pursue courses leading to a second major or double minor.

MAJOR IN PHYSICAL EDUCATION

Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Eng. 211, 212, 213	5 (5-0)	5 (5-0)	5 (5-0)
Math. 311, 312	5 (5-0)	5 (5-0)	.....
Hist. 210 .....	.....	.....	5 (5-0)
Phy. Ed. 210a, 210b, 210c	1 (0-2)	1 (0-2)	1 (0-2)
Phys. Ed. 213	1 (1-0)	.....	.....
Ed. 211	1 (0-2)	.....	.....
Art Appreciation	2 (0-2)	2 (0-2)	2 (0-2)
or			
Music Appreciation	2 (0-2)	2 (0-2)	2 (0-2)
R.O.T.C. 211, 212, 213	2 (2-2)	2 (2-2)	2 (2-2)
Vocations	3 (0-6)	3 (0-6)	.....
Phys. Ed. 219 .....	.....	.....	1 (0-2)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chem. 111, 112	5 (3-4)	5 (3-4)	.....
Bot. 111	5 (3-4)	.....	.....
Zool. 111 .....	.....	5 (3-4)	5 (3-4)
Eng. 220 or 221 .....	.....	5 (5-0)	.....
Hist. 213, 221, or 222	5 (5-0)	.....	5 (5-0)
Phy. Edu. 214 .....	.....	1 (0-5)	.....
Phy. Edu. 217 (women)	1 (0-5)	.....	.....
Phy. Edu. 218 .....	.....	1 (0-5)	.....
Phy. Edu. 219a .....	.....	.....	1 (0-5)
Phy. Edu. 226	1 (0-5)	.....	.....
Phy. Edu. 234 .....	.....	5 (5-0)	.....
Phy. Edu. 254	2 (1-4)	.....	.....
Edu. 221, General Psychology .....	.....	.....	5 (5-0)
Phy. Edu. 229a .....	.....	.....	1 (0-5)
R.O.T.C. 221, 222, 223 (men) .....	.....	.....	.....

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Ed. 222	3 (3-0)	.....	.....
Ed. 223	3 (3-0)	.....	.....
Ed. 224 .....	.....	3 (3-0)	.....
Ed. 231 .....	.....	3 (3-0)	.....
Ed. 236 .....	.....	.....	3 (3-0)
Ed. 237 .....	.....	.....	3 (3-0)
Zool. 131, Human Anatomy	5 (3-4)	.....	.....
Phy. Edu 213is .....	.....	.....	1 (0-5)
Phy. Edu. 225 Teach. of Football (men) ..	2 (2-1)	.....	.....
Phy. Edu. 225b Teach. of Basketball .....	.....	2 (2-1)	.....
Phy. Edu. 225c Teach. of Ind. Sports	2 (2-1)	.....	.....
Phy. Edu. 225d Teach. of Track and Baseball (men) .....	.....	.....	3 (2-2)
Phy. Edu. 225e Teach. of Social, Tap and Folk Dancing	2 (2-1)	.....	.....
Phy. Edu. 225ss Teach. of Soccer and Hockey	2 (2-1)	.....	.....
Phy. Edu. 225w Teach. of Aquatics .....	.....	2 (2-1)	.....
Phy. Ed. 236 Prin. of Health Ed. .....	.....	3 (3-0)	.....
Zool. 141, Human Physiology .....	.....	.....	5 (5-0)
Phy. Ed. 243 the Teaching of Phy. Ed. ....	.....	.....	5 (3-4)
Phy. Ed. 245 Hist. and Prin. of Phy. Ed. ...	5 (5-0)	.....	.....

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Phy. Edu. 238 First Aid and Safety	3 (3-0)	.....	.....
Phy. Edu. 225a Teach. of Softball and volleyball (women)	2 (2-1)	.....	.....
Phy. Edu. 225n Teaching of Net Games	2 (2-1)	.....	.....
Phy. Edu. 222 Kinesiology	3 (3-0)	.....	.....
Phy. Edu. 223 Individual Phy. Edu. ....	.....	3 (3-0)	.....
Phy. Edu. 232 Community Recreation	3 (3-0)	.....	.....
Phy. Edu. 224 The Teaching of Health Ed. ...	3 (3-0)	.....	.....
Phy. Edu. 249 Organization and Administ. of Health and Phy. Edu. ....	.....	5 (5-0)	.....
Phy. Edu. 253 Problems in Phy. Edu. ....	.....	.....	3 (3-0)
Phy. Edu. 255 Problems in Health Edu. ...	.....	3 (3-0)	.....
Econ. 231 Economics .....	.....	5 (5-0)	.....
H. E. 132 Child Development	4 (4-0)	.....	.....
Ed. 251 Practice Teaching .....	.....	.....	5 (1-8)
Res. 246 Research .....	.....	3 (3-0)	.....
Soc. 231 Sociology .....	.....	.....	5 (5-0)

COURSES FOR MAJOR AND MINOR STUDENTS

The activity courses listed below are designed for major and minor students. Instruction is given in methods of teaching activities in elementary and secondary schools; and the correlation of physical education activities with other school subjects. Special attention is given to the organization of demonstrations, pageants, and playground activities.

212f. Folk Dancing

Characteristic dances of many countries, including Sweden, Hungary, Austria, Spain, France, Holland, the United States and others. Credit 1(0-2).

213is. Individual Sports (Men and women.)

Technical study is made of such activities as shuffleboard, handball, ping-pong, badminton, croquet, archery, and tennis. Credit 1(0-5).

214. Rhythemics (Men and women.)

Activities included are clog, tap and folk dancing. Credit 1(0-5).
See above.

217. The Modern Dance (Women.)

A concentrated course in the Modern Dance which is required of all women physical education major and minor students. Credit 1(0-5).

218. Basketball. Stunts and Tumbling. (Men and Women.)

Two different sections. This course is designed to familiarize the student with the rules and techniques of basketball. The second half of the course includes concerted practice in mastering skills in stunts and tumbling. Credit 1(0-5).

219a. Swimming, Track and Field (Men and Women.)

Two different sections. The first half of this course is designed to develop proficiency in such basic aquatic skills as the crawl, sidestroke, breaststroke, treading, floating, and diving. The second half provides the opportunity for developing a mastery of the skills and techniques of track and field. Prerequisite: 219. Credit 1(0-5).

222. Kinesiology (Men and Women.)

A study of the bodily movements, types of muscular exercises and their relation to the problems of bodily development. Prerequisites 221, 241. Credit 3(3-0).

223. Individual Physical Education (Men and Women.)

A study is made of methods of examining and determining needs of the handicapped; activities suitable for individuals with abnormal body conditions, and the conduct of a program of restricted activities to meet their needs. Prerequisite: Human anatomy. Credit 3(3-0).

225. The Teaching of Football (Men.)

A study is made of the history of football, rules, skills, techniques, methods of organizing practices, strategy, team offenses and defenses, and of various modern formations and systems of play. Credit 2(0-2).

225a. The Teaching of Softball and Volleyball (Women.)

A study is made of the history of rules, skills, teaching techniques, methods of organizing, and teaching softball and volleyball. Credit 2(1-2).

225b. The Teaching of Basketball (Men and Women.)

Two different sections. A study is made of the history and development of basketball, the skills, individual and team tactics, strategy, and the techniques of teaching basketball. The women's section provides in addition, instruction and practice in officiating basketball. Credit 2(1-2).

225c. The Teaching of Individual Sports (Men and Women.)

This course is designed to familiarize students with methods and techniques for teaching such individual sports as shuffleboard, handball, ping-pong, badminton, archery, and tennis. Credit 2(1-2).

225d. The Teaching of Track and Baseball

A study is made of the history and development of each sport, the skills, individual and team offenses, and defenses, strategy, and the techniques of teaching track and baseball. Credit 3(2-2).

225e. The Teaching of Social, Tap and Square Dancing (Women.)

Consideration is given to the methods of teaching social, tap, and square dancing. Credit 2(1-2).

225N. The Teaching of Net Games (Men and Women.)

A study is made of the methods of teaching a variety of net games including volleyball, Newcomb, badminton, tennis and deck tennis. Credit 2(1-2).

225ss. The Teaching of Soccer and Hockey (Women.)

A study is made of the history and development of each sport, the skills, individual and team tactics, strategy and techniques of teaching soccer and hockey. Credit 2(2-2).

225w. The Teaching of Swimming, and Lifesaving (Men and Women.)

This course is designed to develop those skills required for the American Red Cross standard Lifesaving certificate, and to provide instruction in desirable methods and techniques for the teaching of swimming and aquatic events. Prerequisites: 219, 219a or equivalent. Credit 2(1-2).

226. Group Games and Football or Hockey (Men and Women.)

Two different sections. A study is made of a large variety of games of lower organization of the circle, group and line type, which might be suitable for the playground, the gymnasium, camp, and for adult gatherings. A concentrated study is also made of the techniques of football for men and hockey for women. Credit 1(0-5).

229a. Combatives and Baseball (Men.)

A course designed to teach a wide range of dual, and group or team combatives running exercises, class formations, and concentrated practices in mastering the skills and techniques of the sport of baseball. Credit 1(0-5).

232. Community Recreation (Men and Women.)

A study is made of city, state and national organizations. Practice is given in the general principles and techniques in the organization and promotion of leisure activities for home, school and community. Credit 3(3-0).

232a. Nature and Function of Play (Men and Women.)

A brief study of the history and theories of play, and play as a function of enriched living. Credit 2(2-0).

234. Personal and Community Health (Men and Women.)

This course aims to establish within the individual a basis for positive health and effective living through a consideration of those factors which effect his personal and health efficiency. Consideration is also given to the field of public health as it affects the community, with special emphasis being placed on ways in which the individual and community agencies may improve and maintain group health. Credit 5(5-0).

236. Principles of Health Education (Men and Women.)

A study is made of principles for the teaching of health education in elementary and high schools. A close correlation with physical education and other subjects is outlined and encouraged. Prerequisite: Personal and Community Hygiene. Credit 3(3-0).

238. First Aid and Safety (Men and Women.)

The first two thirds of this course is devoted to a study of techniques of first aid to the injured in the home, school, and community and to the teaching of safety measures to be practiced in daily living. The standard certificate of the American National Red Cross are issued upon successful completion of this phase. In the last third of the course consideration is given to the prevention and care of injuries occurring in physical education classes and competitive sports. Credit 3(2-2).

243. The Teaching of Physical Education (Men and Women.)

Two different sections. This course points out the best procedures in acquiring desired outcomes in physical education. Practice is given to planning, organizing and supervising physical education class activities. Prerequisites: Principles of physical education and an adequate number of other physical education courses. Credit 5(3-4).

244. The Teaching of Health Education (Men and Women.)

In this course consideration is given to the methods, materials and procedures for the teaching of health in the elementary and high schools. Prerequisites: Principles of Health Education and Personal Hygiene. Credit 3(3-0).

245. History and Principles of Physical Education (Men and Women.)

A study of the evolution of physical education from the earliest time down to the present day. Consideration is given to the relationship of physical education to education and to national life and ideals through the different historical periods. A critical analysis is made of the scientific basis for physical education with applications of the aims and objectives to the modern concepts of education.

249. The Organization and Administration of Health and Physical Education (Men and Women.)

A study of philosophy and policies in the administration of a health and physical education program, including the classification of students, the staff, teaching load, time schedule, finance, the gymnasium, locker-rooms, equipment, and inter-scholastic athletics. Prerequisites: Principles, and an adequate number of other physical education courses. Spring. Credit 5(5-0).

252. Athletic Officiating (Men and Women.)

Two different sections. Credit 1(0-2).

253. Problems in Physical Education (Men and Women.)

A study of special administrative problems in the organization of physical education programs and the coordination of its different phases pertinent to men and women of professional preparation. Administrative problems of physical education, including curriculum construction in the light of historical backgrounds, intramural activities, girls' athletics, athletic insurance and athletic associations. Credit 3(3-0).

254. Field Laboratory Experiences

(Open to students wishing to major in Physical Education.)

A course designed to provide opportunities for students to render service to children of various ages through the many community and school resources. Experience is gained by the student through a study of the growth, development and learning processes of the child through supervised activities. Prerequisite: Sophomore standing. Credit 2(1-4).

255. Problems in Health Education

This course is designed to give the student opportunity to analyze current problems in health education as they relate to the individual student, the total school program, resources in the community, public relations, and health of the teacher. Prerequisite: 213, 234, 236. Credit 3(3-0).

DEPARTMENT OF PHYSICS

The purposes of the courses offered by the Department of Physics are:

1. To train students desiring to meet the urgent need for physicists in industrial or civil service research laboratories, and to provide them with courses required for graduate study.
2. To train teachers of physics for the secondary schools.
3. To provide the fundamental and advanced courses required by majors in other areas.
4. To provide non-science students with experiences which will give a greater appreciation of the present and future importance of physics in an age of machines and atomic energy.

The major in Engineering Physics will supplement the minimum of courses outlined below by selecting electives from other courses in the School of Engineering, as directed by the Department of Physics. Students desiring to teach physics will seek a major in Physics, and they should consult with this department before registration for the Freshman year; they should begin the study of Physics with Physics 321 in the Sophomore Year.

For both majors one year of French is required.

The non-science major should elect Physics 311, 312.

**OUTLINE OF COURSES FOR MAJORS IN PHYSICS
AND
MAJORS IN ENGINEERING PHYSICS**

(Freshmen will follow outline of School of Engineering
on page 72.)

Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mathematics 321, 322, 323	5(5-0)	5(5-0)	5(5-0)
Physics 321, 322, 323	5(3-4)	5(3-4)	5(3-4)
French	5(5-0)	5(5-0)	5(5-0)
Military or Air Science	2	2	2
Electives	2	2	2
	<hr/>	<hr/>	<hr/>
	19	19	19

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mathematics 331 .....	.....	5 (5-0)	.....
Physics 325, 326	2 (2-0)	2 (2-0)	.....
Physics 331, 328, 338	5 (5-0)	5 (3-4)	5 (5-0)
Physics 334, 339	3 (1-4)	.....	2 (0-4)
Mathematics 501 .....	.....	.....	5 (5-0)
Electives	8	6	5
	18	18	17

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 332, 340, 504	3 (3-0)	5 (5-0)	5 (5-0)
Social Science or Education	5	5	5
Electives	10	8	8
	18	18	18

COURSES IN PHYSICS**311. Principles of Physics I**

The first half of a two-quarter terminal course, including mechanics, properties of matter, and heat. For non-science majors. Prerequisite: Math. 311. Credit 5(4-2).

312. Principles of Physics II

The second half of a two-quarter terminal course, including electricity and magnetism, wave motion, sound, light, and selected topics in Modern Physics. Prerequisite: Physics 311. Credit 5(4-2).

321. General Physics I

A study of the fundamental principles of mechanics, properties of matter, heat and thermometry. For science and technical majors. Prerequisite: Math. 313. Credit 5(3-4).

323. General Physics III

A continuation of General Physics, including topics in wave motion, sound, light, and atomic physics. Prerequisite: General Physics II. Credit 5(3-4).

322. General Physics II

A continuation of General Physics including magnetism, direct and alternating current electricity. Prerequisite: General Physics I. Credit 5(3-4).

325. Physical Mechanics I

Includes such topics as rectilinear and curvilinear motion of a particle and of systems of particles, energy relations in a force field. Prerequisite: Physics 323, Math. 323. Credit 2(2-0).

326. Physical Mechanics II

Includes such topics as mechanics of a rigid body, oscillations, wave motion, and mechanics of a fluid. Methods of vector analysis are used where applicable. Prerequisite: Physics 325. Credit 2(2-0).

328. Heat and Temperature Measurement

A study of methods of heat transfer, thermocouples, resistance thermometry, calorimetry, and specific heats, with appropriate experiments. Prerequisites: Physics 323, Math. 323. Credit 5(3-4).

331. Electricity and Magnetism

An intermediate course including electric fields and potential, D-C circuits, chemical and thermal emf's, dielectrics, meters, magnetic properties of matter, alternating current, electromagnetic waves, and electronics. Prerequisites: Physics 323, Math. 323. Credit 5(5-0).

332. Thermodynamics I

A study of the first and second laws of thermodynamics, the Carnot cycle, and heat engines. Prerequisites: Physics 328 and Math. 331 (or concurrent election). Credit 3(3-0).

333. Thermodynamics II

A study of the third law of thermodynamics and of the thermodynamic properties of gases, liquids, and solids. Prerequisite: Physics 332. Credit 3(3-0).

334. Electrical Measurements

Same as E. E. 334. Prerequisite: Physics 331, or concurrent election. Credit 3(1-4).

335. Electrical Measurements.

Same is E.E. 335. Prerequisite: Physics 334. Credit 3(1-4).

337. Vibration and Sound

Production, propagation, transmission and reception of sound. Applications to acoustics, mechanics, and electrical problems. Prerequisites: Physics 323, Math. 332. Credit 5(5-0).

338. Light

Propagation, reflection, refraction of light, lenses and optical instruments, interference, diffraction, polarization, line spectra, thermal radiation, photometry, and color. Prerequisites: Physics 323, Math. 323. Credit 5(5-0).

339. Experimental Light

Prerequisite: Physics 338, or concurrent election. Credit 2(0-4).

340. Introduction to Modern Physics

An advanced course involving electromagnetic theory of radiation, kinetic theory of gases, specific heats, the electron, electronics, X-rays, spectra, radioactivity, nuclear physics, and cosmic rays. Prerequisite: Physics 331, Math. 331 (or concurrent election). Credit 5(5-0).

342. Experimental Electron and Nuclear Physics

Measurement of charge on electron, e/m, ionization potential, spontaneous nuclear disintegrations and decay curves, Geiger counters. Prerequisite: Physics 340, or concurrent election. Credit 2(0-4).

343. Experimental Electronics

An experimental study of photoelectric cells, vacuum and gaseous tubes, amplifiers, photometers, and other scientific electronic devices. Prerequisite: Consent of the instructor. Credit 2(0-4).

GRADUATES AND ADVANCED UNDERGRADUATE**501. Theoretical Physics I**

Includes topics in vector analysis, dynamics of particles, dynamics of rigid bodies, advanced dynamics, and hydrodynamics. Prerequisites: Physics 326, Math. 331. Credit 5(5-0).

502. Theoretical Physics II

Topics in kinetic theory, electromagnetism, optics, and spectroscopy. Prerequisites: Physics 501. Credit 5(5-0).

503. Electromagnetism

Includes field theory of electromagnetism, electrostatics, solutions of LaPlace's equation, dielectrics, magnetic fields of currents, magnetic materials. Maxwell's equations, electromagnetic waves and energy flow. Prerequisite: Physics 331, Math. 331. Credit 5(5-0).

504. Particles of Modern Physics

An advanced study of cathode rays, positive rays, photons, X-rays, positrons, neutrons, and cosmic rays. Prerequisite: Physics 340. Credit 5(5-0).

DEPARTMENT OF PLANT INDUSTRY

The Department of Plant Industry offers courses in agricultural engineering, field crops, forestry, fruits and vegetable production, geology, and soils.

Curricular leading to the degree of Bachelor of Science are offered in (1) Agricultural Engineering, (2) Agronomy, (3) Horticulture, and (4) Ornamental Horticulture.

These curricular are designed to provide scientific and technical experiences needed in general farming, extension work, teaching in agricultural high schools and colleges, specialized areas of crop production, business enterprises; and a sound background for graduate work.

Students who wish to elect majors under Plant Industry should follow the Basic Curriculum in Agriculture for the freshman and sophomore years (see page 63). Major programs for the junior and senior year may be worked out in conference with the Head of the Department.

Curriculum in Agricultural Engineering

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Engineering 131, 123	3 (1-4)	.....	3 (1-4)
Physics 312, 313	5 (4-2)	5 (4-2)	.....
Mathematics 313, 321, 322	5 (5-0)	5 (5-0)	5 (5-0)
Mechanical Engineering 328, 331	2 (0-4)	.....	5 (5-0)
English 224 .....	.....	3 (2-2)	.....
Agricultural Engineering 124 .....	.....	.....	3 (0-6)
Electives	3 ()	5 ()	3 (3
	<u>18</u>	<u>18</u>	<u>19</u>

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Engineering 132, 141, 503	3 (1-4)	3 (1-4)	5 (1-8)
Agricultural Economics 122, 123	3 (3-0)	3 (3-0)	.....
Soils 140 .....	.....	3 (3-0)	.....
Mechanical Engineering 322	5 (5-0)	.....	.....
Agricultural Engineering 142, 502, 500	3 (0-6)	3 (2-2)	5 (3-4)
Rural Sociology 131 .....	.....	.....	3 (3-0)
Rural Sociology 502 .....	.....	.....	3 (3-0)
Electives	3 ()	5 ()	3 ()
	<u>17</u>	<u>17</u>	<u>19</u>

AGRICULTURAL ENGINEERING**111. Agricultural Drawing**

Lettering, use of instruments, multi-view projection drawing, auxiliary projection, selectional views and dimensioning. Credit 3(0-6).

122. Farm Shop

Proper use of tools, woodwork, bench and vise work, pipe fitting and concrete work. Credit 3(1-4).

123. Field Machinery

Principles, operation, adjustment, and maintenance of farm field machinery. Credit 3(1-4).

124. Farm Buildings

Fundamentals of building construction applied to location, selection of materials, foundations and planning. Prerequisite: Ag. Eng. 111. Credit 3(0-6).

131. Surveying and Drainage

Principles of surveying and drainage, planning of soil erosion and drainage systems, based on topographical and soil requirements. Prerequisite: Soils 123, and Math. 311, 312. Credit 3(1-4).

132. Farm Power

Principles of mechanical power, use, care and adjustment of internal combustion engines and electric motors. Prerequisite: Phy. 311. Credit 3(1-4)

141. Rural Electrification

A study of electricity, electrical wiring, and electrical devices, including motors, with particular emphasis upon the relation of these to the home and the farm. Prerequisite: Physics 311, 312. Credit 3(1-4).

142. Water Supply and Sanitation for the Farm and Home

The planning and installation of farm water and sanitation systems. Prerequisite: Ag. Eng. 122, Bact. 123. Credit 3(2-2).

Advanced Undergraduates and Graduates**500. Terracing and Drainage**

Improvement of soil by use of engineering structures, practice in construction of terraces and drainage systems. Prerequisite: Ag. Eng. 131. Credit 5(3-4).

501. Farm Shop Organization and Management

A course designed for prospective and in-service teachers of vocational agriculture. Includes presentation of purpose, plans, and equipment of shops, organization of course of study, and methods of teaching. Prerequisite: Ag. Eng. 122, Ag. Ed. 143. Credit 3(3-0).

502. Advanced Farm Shop

Care, operation, and maintenance of farm shop power equipment.
Prerequisite: Ag. Eng. 122. Credit 3(0-6).

503. Special Problems in Agricultural Engineering

Special work in agricultural engineering on problems of special interest to the student. Credit 1-5 hours.

CURRICULUM IN AGRONOMY**Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agronomy 124, 131	3 (2-2)	3 (2-2)	.....
Agricultural Engineering 123, 132, 124	3 (1-4)	3 (1-4)	3 (0-6)
Agronomy 501	3 (3-0)	.....	.....
Agricultural Economics 122, 123	3 (3-0)	.....	3 (3-0)
Agronomy 141	3 (1-4)	.....	.....
Bacteriology 123 .....	.....	5 (3-4)	.....
Soils 132 .....	.....	3 (3-0)	.....
Botany 112 .....	.....	.....	5 (3-4)
Zoology 142 .....	.....	.....	3 (3-0)
Electives	3 ()	3 ()	3 ()
	<hr/>	<hr/>	<hr/>
	18	17	17

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Botany 121, 131, 133	3 (2-2)	4 (2-4)	3 (2-2)
Bacteriology 145	4 (2-4)	.....	.....
Agricultural Engineering 131 .....	.....	.....	3 (1-4)
Animal Husbandry 132 .....	.....	5 (3-4)	.....
Rural Sociology 131 .....	.....	3 (3-0)	.....
Agronomy 503 .....	.....	3 ( )	.....
Math. 318 .....	.....	.....	5 (5-0)
Political Science 231	5 (5-0)	.....	.....
Agronomy 502 .....	.....	.....	3 (2-2)
Soils 140	3 (3-0)	.....	.....
Zoology 133 .....	.....	.....	3 (2-2)
Electives	3 ()	3 ()	3 ()
	<hr/>	<hr/>	<hr/>
	18	18	20

Suggested Electives

Soils 134 (Soils and Fertilizers)	4
Agricultural Economics 141 (Farm Records)	3

CURRICULUM IN SOILS

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mathematics 313, 321, 318	5 (5-0)	5 (5-0)	5 (5-0)
Physics 321, 322, 323	5 (3-4)	5 (3-4)	5 (3-4)
Chemistry 121, 122	4 (2-6)	4 (2-6)	.....
Bacteriology 123 .....	.....	.....	5 (3-4)
Electives	3 ()	3 ()	3 ()
	<hr/>	<hr/>	<hr/>
	17	17	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agronomy 181, 501	3 (2-2)	3 (3-0)	.....
Chemistry 141, 181	5 (3-6)	.....	5 (3-4)
Soils 140, 132, 142	3 (3-0)	3 (3-0)	3 (2-2)
Botany 121	3 (2-2)	.....	.....
Biochemistry 135 .....	.....	5 (2-6)	.....
Soils 134, 504 .....	.....	4 (2-4)	2 ()
Political Science 231 .....	.....	.....	5 (5-0)
Electives	3 ()	3 ()	3 ()
	<hr/>	<hr/>	<hr/>
	17	18	18

FORESTRY

131. Introduction to Forestry

The importance of forest and forestry to national and local economies; special attention given to conditions in southeastern United States. Survey of the various fields of forestry. Field trips will be devoted to identification of important forest trees of the Southeast. Credit 3 (2-2).

132. Forest Utilization

Theory and use of instruments in determining the volume of logs, trees, and stands. Problems in marketing and utilizing the products of the forest. Emphasis on marketing products of farm woodlands of the Southeast. Credit 3 (2-2).

133. Farm Forestry

Principles of farm woodland management, including measurement of logs, trees, and stands; planting and harvesting methods; basic silvicultural principles; improvement cuttings. Forestry 131 and 132 recommended. Credit 3 (2-2).

AGRONOMY**111. General Farm Crops**

History, classification, distribution, culture and utilization of the important field crops. Identification of crops, crop seeds, and farm weed seeds. Credit 3(2-2).

121. Principles of Crop Production

Factors affecting crop yields with emphasis on choice of crops and varieties, soil fertility and fertilizers, tillage and harvesting methods, and crop rotation. Credit 3(2-2).

123. Soils

The general nature and properties of soils with introductory treatment of soils genesis, morphology and classification. Credit 4(2-4).

124. Forage Crops

Grasses, legumes and other plants and their uses as hay, pasture, silage and special purpose forage; identification of plants and seed and study of quality in hay, silage and pasture population. Credit 3(2-2).

131. Hay and Pasture Crops

Major problems connected with meadow and pasture establishment and management. Credit 3(2-2).

132. Soil Fertility

General principles of soil fertility; the physical, chemical and biological factors affecting soil fertility and crop production. Credit 3(3-0).

134. Soils and Fertilizers

Analytical and theoretical analysis of soils and fertilizers. Application of physics, chemistry and microbiology to the study of soil-plant interrelationships. Credit 4(2-4).

140. Soil and Water Conservation

Social and economic aspects of soil deterioration and water conservation. Principles of land improvement as applied especially to humid regions. Credit 3(3-0).

141. Determining Crop Quality

The recognition of high quality crop products as influenced by growth and maturity factors, weeds and diseases; determination of commercial quality through study of use and grades; identification of crops, weeds and diseases found in the U. S.; planning crop exhibits. Credit 3(1-4).

142. Soil Genesis and Classification

Soil genesis, morphology and classification of the major soil groups of the United States in relation to soil management. Study of soil maps and soil survey reports. Credit 3(2-2).

Graduates and Advanced Undergraduates**501. Crop Ecology**

The physical environment and its influence on crops; geographical distribution of crops. Credit 3(3-0).

502. Breeding of Crop Plants

Significance of crop improvement in the maintenance of crop yields; application of genetic principles to techniques used in improvement of crops; the place of seed certification in the maintenance of varietal purity and production of quality seed. Credit 3(2-2).

503. Special Problems in Agronomy

Designed for students who desire to work out special problems in crop production. Credit 2 to 6 hours.

504. Special Problems in Soils

Research problems for advanced students majoring in agronomy. Credit 2 to 8 hours.

GEOLOGY**111. Physical Geology**

Relation of geologic principles in the development of a balanced concept of the earth and earth history; identification of rocks and minerals; weathering, water and mineral resources; sediments, metamorphosis and volcanism; land forms. Credit 4(3-2).

HORTICULTURE**111. General Horticulture**

This course is designed to acquaint students with the various divisions in horticulture such as floriculture, ornamental horticulture, landscaping, olericulture and pomology. Credit 3(3-0).

112. Amateur Floriculture

General principles of growing flowers on a small scale in the greenhouse and outside. The potting of plants and planning the small border flower bed. Credit 3(2-2).

122. Fruit Production

Planting, propagating and caring for orchards as they are applied to North Carolina conditions. Credit 3(2-2).

123. Greenhouse Construction and Management

Types of greenhouses and their structural detail with regard to watering, heating, ventilation and lighting. Environmental control for various types of plants. Credit 4(2-4).

130. Plant Propagation

The propagation of plants by seed, cuttings, budding and grafting. Prerequisite: Botany 111. Credit 3(2-2).

131. Commercial Flower Production

Culture and marketing of cut flowers. Credit 4(2-4).

132. Commercial Flower Production

Culture and marketing of pot and conservatory plants. Credit 4(2-4).

133. Vegetable Production

Commercial vegetable production with special emphasis on large scale production, harvesting and marketing of vegetables. Credit 4(2-4).

134. Small Fruits

The culture of strawberries, grapes, raspberries, blackberries and other small fruit. Field trips, mostly within the state. Credit 3(2-2).

135. Principles of Landscape Planning

An introduction to the fundamentals of landscape design with particular emphasis upon planning of small home properties. Prerequisite: Agricultural Engineering 111. Credit 4(2-4).

136. Plant Materials

The merits, adaptability and identification of ornamental trees and shrubs used in landscape planting. Credit 4(2-4).

140. Arboriculture

Principles of landscape maintenance with reference to tree surgery and pruning. Emphasis will be placed on preventive measures for control of insects and diseases of trees. Moving and planting of large shrubs and trees. Credit 4(2-4).

141. Plant Propagation and Nursery Practice

Methods used in the commercial propagation of fruits and ornamental shrubs with emphasis on grafting, budding and cutting. Nursery culture methods and practices. Credit 3(1-4).

142. Flower Shop Management

Floral designing and flower shop operation. Credit 3(1-4).

144. Landscape Planning and Planting of Small Properties

Emphasis will be placed on designing landscaping home and school grounds. Credit 4(2-4).

145. Landscape Designing

Practice in model landscape construction. Credit 3(0-6).

Advanced Undergraduates and Graduates**501. Special Problems in Horticulture**

Work along special lines given largely by the project method for advanced undergraduate students who have the necessary preparation. Credit 2 to 5 hours.

RESEARCH

246. Senior Research

An introduction to the meaning of educational research involving the use of scientific method in collecting, organizing, interpreting, and reporting data. Open only to seniors in the School of Education and Science. Each student will complete a paper utilizing the scientific approach which will constitute a Research Project, or will contribute to the completion of a project requiring the work of not more than two persons. Papers recommended by the advisers will be bound and will become the property of the College Library.

For graduate research in specific fields, Graduate Thesis, page 78.

RESERVE OFFICERS TRAINING

ROTC FACILITIES

The Headquarters of the Army and Air Force ROTC units are located in building T-1200 on North Campus. This building was formerly the administration building of the military hospital, of the local Army Overseas Replacement Depot. The Army Headquarters is located in the east wing of the building, while the Air Force Headquarters is located in the west wing. Also located in this building are a Reproduction Room, ROTC Library and two Classrooms. The Reproduction Room and the Library are used jointly by the two services, while the classrooms are used by the Air Force exclusively.

Other facilities used by the ROTC are classrooms in buildings T-1294, T-1244, T-1248, Supply Room, T-1250, Rifle Range T-1273 and the garage T-1219. All of these facilities except classroom T-1244 are used jointly by the services. The facilities are located on north campus. Available to both is the athletic field, located in the main campus. Presently under construction on North Campus, facing the ROTC Headquarters, is a Drill Field, to be used jointly by the services upon completion.

AIR SCIENCE AND TACTICS

First Year Basic. Air Science 211, 212, 213

Introduction to AFROTC

4 Clock hrs.

This block of instruction describes the AF ROTC program, orients the cadet into the program and explains the obligations for a significance of service in the Armed Forces.

Introduction to Aviation

16 Clock hrs.

A history of the development of aviation, a description of classes and types of aircraft, parts of an airplane and the basic principles of flight.

Fundamentals of Global Geography 10 Clock hrs.

The evaluation of geographical knowledge, map projections, major geographic regions of the earth, the geography of weather, geographical basic of power and military aspects of global geography.

International Tensions and Security Structures 15 Clock hrs.

Factors that contribute to the status of a nation as a world power; forces that develop tensions between world powers, the world military situation, international security structures that have been established to deal with the problem of security, and the role of the United States in world leadership.

Instruments of National Military Security 15 Clock hrs.

The first six hours deal with the Armed Forces: historical development, mission, weapons and joint operations. The final nine hours are devoted to military aviation: the place of air power in a modern war, characteristics and capabilities of military aviation, the future of military aviation in the United States.

Leadership Training Laboratory 30 Clock hrs.

This instruction continues through the entire year and includes wearing the uniform, military courtesy, element and mass drill, and other leadership exercises. Credits 2(2-2).

Second Year Basic, Air Science 221, 222, 223**Introduction** 1 Clock hr.

A general review of subjects covered in freshman year and a preview of sophomore year subjects.

Elements of Aerial Warfare 52 Clock hrs.

This block covers targets, weapons, delivery aircraft, the air ocean, bases and forces.

The study of targets includes definition and types of military targets, and intelligence procedures related to targets; i.e., cycle pattern of intelligence activities, aerial photographs, target systems, and selection.

The study of weapons includes definition and types of aerial weapons including conventional high-explosive, atomic, rocket-propelled, chemical, biological, and psychological.

The study of delivery aircraft deals with factors governing design and types of delivery aircraft.

The study of the air ocean deals with the significance of the air as a medium for delivery of weapons and problems associated with delivering weapons through the air ocean. These problems include target reconnaissance, protection against enemy defenses, problems peculiar to delivery of weapons versus joint military operations targets, and problems associated with delivery of weapons in aerial defense of the homeland.

The study of air bases deals with the air base as a platform for the delivery of weapons, types of air bases, factors relating to the location and size of air bases, problems associated with isolated and extreme climate base locations, and engineering aspects in construction and maintenance of air bases.

The study of forces covers USAF combat and support organizations and the role and responsibility of each officer and airman in accomplishing the Air Force mission.

Careers in the USAF

7 Clock hrs.

Purpose and operation of the USAF Officer Career Program, a description of career fields, and personal and professional advantages offered by a career in the USAF. A brief coverage of Air Force careers for airmen is also included.

Leadership Laboratory—Cadet Non-Commissioned Officer Training

30 Clock hrs.

A continuation of the subjects covered in Air Science I Military Training: wearing the uniform, military courtesy, element and mass drill, other leadership exercises. Students gain experience in leading a small cadet unit. Course continues through entire year. Credit 2(2-2).

First Year Advanced Course Air Science III 231-232-233

Introduction to Advanced AFROTC

2 Clock hrs

The Air Force Commander and His Staff

8 Clock hrs

Responsibilities and functions of the Air Force Commander, organization of Military staffs, and principles of effective staff work.

Problem Solving Techniques

10 Clock hrs

A study of the laws of learning, the nature of thinking and problem solving, a series of steps to be considered in problem solving, and conference techniques in the solution of problems.

The Communications Process and Air Force Correspondence

25 Cloak hrs

Nature of the communication process, communication media within the Air Force, emphasis on the types of military correspondence, general semantics, learning as a communicative process, and teaching methods.

The Military Justice System

15 Clock hrs

Crimes and offenses, types of courts martial; pre-trial, trial and post trial procedures; and board procedures.

Applied Air Science

50 Clock hrs.

Aerodynamics and propulsion; aircraft engines; aerial navigation; and weather, including teletype weather reports, maps and charts.

Air Force Base Functions 10 Clock hrs.

The typical air base organization, its functions and functions of the various base officers.

Leadership Training Laboratory 30 Clock hrs.

This is scheduled through the entire year and continues training in wearing the uniform, military courtesy, units and mass drill, and other leadership activities for cadet, flight, squadron, and group officers. Credit 3 (4-2).

Summer Camp

All Advanced AFROTC Students will attend AFROTC Summer Camp at an Air Force Base designated by Headquarters AFROTC after completion of their junior year.

The mission of AFROTC Summer Camp is to supplement the institutional phase of AFROTC by permitting eligible AFROTC students to observe Air Force work intimately by living on an Air Force base, studying the functions performed by available activities, and absorbing the principles of leadership and discipline expected of officers. Particular emphasis is to be given to Orientation toward the principal weapon of the Air Force—the Airplane.

Second Year Advance Course. Air Science IV 241, 242, 243**Critique of Summer Camp and Introduction to Air Science IV** 2 Clock hrs.**Leadership Seminar** 38 Clock hrs.

Leadership concepts and responsibilities; functions and leadership at different echelons of command; management and human relations aspects of leadership.

Career Guidance 5 Clock hrs.

Review and current status of occupational fields open to officers; procedures of officer classification; opportunities and application procedures for active duty; specialized training; graduate study; and regular or reserve commissions in the Air Force.

Military Aspects of World Political Geography 45 Clock hrs.

The framework of international politics, the anatomy of political power, geographical basis of power, world military political factors of geography, world powers and strategic areas, changing patterns of power in world politics, and world security problems in relation to international power clashes.

Military Aviation and the Art of War 20 Clock hrs.

Principles of war, historical examples of basic land warfare combat maneuvers, historical survey of naval warfare, historical survey of air warfare, and modern warfare with emphasis on military aviation.

Briefing for Commissioned Service 10 Clock hrs.

How to prepare and report for the first assignment, attitudes and activities of primary concern to a newly commissioned officer on his first assignment and the long range reserve plan.

Leadership Training Laboratory 30 Clock hrs.

A continuation of military training offered in the first three years, plus instruction of subordinates, duties of Officer of the Day and Officer of the Guard, planning and supervising drill and other corps activities. Credit 3(4-2) each week.

AF ROTC COURSE OF STUDY
BY QUARTERS
BASIC COURSE
AIR SCIENCE I

211. Fall Quarter 2 Credit hrs.

Introduction to AF ROTC
 Introduction to Aviation
 Leadership Laboratory

212. Winter Quarter 2 Credit hrs.

Fundamentals of Global Geography
 International Tensions and Security Organizations
 Leadership Laboratory

213. Spring Quarter 2 Credit hrs.

Instruments of National Military Security
 Leadership Laboratory

AIR SCIENCE II

221. Fall Quarter 2 Credit hrs.

Elementary of Aer. War I:
 Introduction
 Targets
 Weapons
 Leadership Laboratory

222. Winter Quarter 2 Credit hrs.

Elementary of Aer. War II:
 Delivery of Aircraft
 The Air Medium
 Leadership Laboratory

223. Spring Quarter 2 Credit hrs.

Elementary of Aer. War III:
 Bases
 Forces
 Careers in A.F.
 Leadership Laboratory

ADVANCED COURSE**AIR SCIENCE III**

231. Fall Quarter	3 Credit hrs.
Int. to Adv. AF ROTC	
AF Comdr. and Staff	
Problem Solving	
Comm. Processes	
Leadership Laboratory	
232. Winter Quarter	3 Credit hrs.
Military Law	
Applied Air Science	
Aerodn. and Prop.	
Leadership Laboratory	
233. Spring Quarter	3 Credit hrs.
Applied Air Science II:	
Navigation	
Weather	
Base Functions	
Leadership Laboratory	

AIR SCIENCE IV

241. Fall Quarter	3 Credit hrs.
Critique of Summer Camp	
Leadership Seminar	
Leadership Laboratory	
242. Winter Quarter	3 Credit hrs.
Military Aspects of World Political Geography	
Leadership Laboratory	
243. Spring Quarter	3 Credit hrs.
Career Guidance	
Military Aviation and Art of War	
Briefing for Comm. Service	
Leadership Laboratory	

CONTACT HOURS

Basic Course including Drill and Leadership Laboratory	3 periods per week
Advanced Course including Laboratory	5 periods per week

MILITARY SCIENCE AND TACTICS**Section I—General**

A Senior (CC) Civilian College type of unit Reserve Officers' Training Corps is organized at this Institution under authority of amended Sections 40-47c of the National Defense Act.

The mission of the Senior ROTC is to produce Officers who have the qualities and attributes essential to their progressive and continued development in the Army of the United States, and to lay foundations for intelligent citizenship.

Two years of military science and tactics are required of all physically qualified male students in their Freshman and Sophomore years, subject to conditions outlined in Section II.

The Senior ROTC program consists of two parts: (1) Basic course and (2) Advanced course which includes a 6 weeks summer camp period. The Basic course will consist of formal instruction for a minimum of 3 hours per week for 2 academic years. The Advanced course will consist of formal instruction for a minimum of 5 hours per week for 2 academic years.

Section II—Conditions for Enrollment in ROTC**1. General Conditions:**

- (1) Be a citizen of the United States and not less than 14 years of age.
- (2) Physically qualified under standards prescribed by Department of the Army.
- (3) Accepted by the college as a regularly enrolled student of Institution.
- (4) Successfully complete such general survey or screening test as may be prescribed.

2. Conditions for Enrollment in Basic Course.

- (1) All general conditions listed in 1 above.
- (2) Not have reached 23 years of age at time of initial enrollment.
- (3) Must have at least 2 academic years remaining in their course at this Institution.
- (4) Sign a deferment agreement which in part, states as follows:
"I hereby agree to complete the basic course, if enrolled therein; to enroll in and complete the advanced course at the proper time, if accepted therefor."

Students who fail to fulfill the terms of their ROTC deferment agreements pertaining to undergraduate work at this institution will be immediately suspended.

3. Conditions for Enrollment in the Advanced Course
 - (1) All general conditions listed in 1 above.
 - (2) Not have passed 26 years of age at time of initial enrollment.
 - (3) Be selected by the Professor of Military Science and Tactics and the President of the Institution.
 - (4) Have completed the basic course Senior ROTC, or received credit in lieu thereof on basis of prior service in the Armed Services.
 - (5) Execute a written agreement with the Government, (Contract), to complete course of instruction, attend a 6 weeks' period of summer camp, and to accept a commission if offered. The contract will expire if the student's attendance at school is interrupted for more than two calendar years.
 - (6) Maintain satisfactory scholastic standing required by College in academic and ROTC work.

Section III—Uniforms and Equipment

All regularly enrolled members of this Senior ROTC are furnished by the Government free of cost, uniforms, equipment and text books. A deposit of ten dollars (\$10.00) is required of all students at time of registration to cover uniforms issued to them and this fee will be refunded when uniforms are returned. The student is responsible for the care, safeguarding, and cleaning of property issued to him. He is financially responsible for the loss, excessive wear, breakage due to carelessness or unauthorized use of clothing and equipment. Each student is required to have a certificate countersigned by his parents or guardian to insure that the Government is reimbursed in case the above regulations are violated. All ROTC property must be returned to the Military Property Custodian at end of school year or when a student withdraws from school, except as indicated below:

- a. Maintenance, repair, and replacement of shoes, low quarter, tan, and socks, cotton, tan, will be at the expense of the student while in his possession.
- b. Students completing basic or advance courses are not required to turn in shoes and socks issued for the course.
- c. Students failing to complete the basic or advance course must turn in the shoes and socks furnished for the course.

Credit for Previous Military Service or Training

For previous honorable military service or training in Army, Navy, Marine Corps or Coast Guard of the U. S. credit may be allowed, subject to approval of the President and the PMS&T, within the following limits:

- (1) For 12 months or more service credit not to exceed the entire basic course of the Senior ROTC.

(2) For six months or more service credit not to exceed the first year of the basic course.

For additional information contact ROTC Headquarters located on the campus.

Section IV—Military Science and Tactics

First Year Basic, MS 211, 212, 213

Organization of the Army and ROTC 5 Clock hrs.

To provide an understanding of the organization of the Army and an orientation on ROTC.

American Military History 30 Clock hrs.

Provides the ROTC Student with a sound foundation in the principles of the art of warfare as they are exemplified in American military history, and through his knowledge to aid in motivating the student toward an understanding and acceptance of his future role as an officer of the United States Army.

Individual Weapons and Marksmanship 25 Clock hrs.

Practical working knowledge of individual weapons presently used in the Army. In addition, this instruction will be aimed at making the student proficient in the conduct of preliminary marksmanship and enables him to coach others correctly.

School of the Soldier and Exercise of Command 56 Clock hrs.

This instruction is continuous throughout the school year and includes voice and command, leadership drill, and the development of essential attributes of leadership, through progressive training; efforts are made to provide a thorough indoctrination in military courtesy and customs of the service. Credit 2(2-2).

Second Year Basic. MS 221, 222, 223

Introduction 1 Clock hr.

A general review of subjects covered in the freshman year and a preview of sophomore year subjects.

Crew-Served Weapons and Gunnery 39 Clock hrs.

Familiarize the student with all types of Infantry crew-served weapons in use by the Army and with the Browning Automatic rifle. To provide the student with a knowledge of the firepower potential; to explain the gunnery principles and methods to control this fire; and to explain their employment in the United States Army.

Map and Aerial Photograph Reading 20 Clock hrs.

To make the student proficient in the use of maps and aerial photographs so that this proficiency may be applied in the study of other subjects in which map and aerial photography may be used.

School of the Soldier and Exercise of Command 56 Clock hrs.

This instruction is continuous throughout the school year and includes voice and command, leadership, drill, and the development of essential attributes of leadership through progressive training; efforts are made to provide a thorough indoctrination in military courtesy and customs of the service. Credit 2(2-2).

First Year Advanced Course. MS 231, 232, 233**Introduction to Advanced GMS ROTC** 1 Clock hr.**Small Unit Tactics and Communication** 59 Clock hrs.

Provide the student with the principles and fundamentals of Small Unit Tactics, to prepare him for Advanced Tactical studies and the principles of communications and communication systems used in the Infantry division.

Organization, Function and Mission of the Arms and Service 28 Clock hrs.

Familiarize the student with the organization, function and mission of the various arms and services in the overall mission of the Army.

Supply sufficient background information on the various branches of the arms and services so as to assist the student in selecting the branch of service in which he desires to be commissioned.

Military Teaching Methods 21 Clock hrs.

To develop an understanding of the principles, methods, and techniques which are fundamental to military instruction; to engender attitudes which will lead to the improvement of instruction; and to provide opportunities for the student to develop skill in the preparation, and evaluation of instruction.

Leadership 12 Clock hrs.

To give the individual an elementary understanding of the psychological, physiological, and sociological factors which affect human behavior.

To convince the individual that it is both desirable and possible for him to be an effective leader.

To emphasize to him the importance of personnel adjustment and the proven methods of accomplishing maximum motivation, to include the troop information and education media.

To show him proven practices and devices which tend to make the leader effective, including character guidance.

Practice in the application of sound principles of leadership to common-place problems appropriate to his grade will be conducted at Summer Camp.

School of the Soldier and Exercise of Command 52 Clock hrs.

This is scheduled throughout the school year and continues training in voice and command, leadership, drill and the development of essential attributes of leadership, through progressive training; efforts are made to provide a thorough indoctrination in military courtesy and customs of the service. Credit 3 (4-2).

Second Year Advanced Course. MS 241, 242, 243**Critique of Summer Camp and Introduction to****MS IV**

1 Clock hr.

Logistics

19 Clock hrs.

To afford the student with the fundamental knowledge of supply and movement of small units.

Operations

55 Clock hrs.

To provide an understanding of staff organization, using division staff as a model; staff duties; forms; records; reports; and orders of the staff. To teach the student to arrive at a sound decision and transmit decision into combat orders. Teach the value of military intelligence and methods of producing intelligence. To familiarize the student with the military team from the squad up to and including the regimental combat team, coordination with Air and Navy. To provide an understanding of duties and responsibilities of company and battalion officers toward training.

Military Administration and**Personnel Management**

25 Clock hrs.

To provide the student with the basic concepts and fundamentals of military administration. To introduce the student to the fundamental concepts of military justice in the armed forces of the United States, as provided for in the Uniform Code of Military Justice and the Manual for Courts-Martial, United States, 151; to teach the basic principles, and methods of procedures for cases; and to teach the principles of non-judicial punishments.

Service Orientation

20 Clock hrs.

To prepare the future officer for active service by an orientation on geographical and economic factors, their influence on the division of people into nations and the courses of war; the responsibilities of a leader; service life.

School of the Soldier and Exercise of Command

52 Clock hrs.

A continuation of military training offered in the first three years, plus instruction of subordinates, duties of officer of the day and officer of the guard, planning and supervising drill and other corps activities. Credit 3 (4-2).

DEPARTMENT OF SOCIAL SCIENCE

In keeping with the general objectives of the College, the offerings of this department are designed to provide students with a cultural and humanistic preparation in the social sciences; to insure students a proper groundwork on which to build advanced technical and professional courses, and to stimulate those qualities and characteristics from which come intellectual vigor, broad human sympathy and constructive imagination.

THE SOCIAL SCIENCES

The social sciences at the Agricultural and Technical College of North Carolina include economics, geography, history, political science, and sociology.

A MAJOR IN THE SOCIAL SCIENCES

Students who wish to major in the social sciences or in a particular social science, may do so by selecting any one of two curricula: (1) Social Studies, or (2) Applied Sociology.

The *Social Studies* curriculum is specifically designed to prepare students for the teaching of history and/or any combination of the social sciences listed above, in junior and senior high schools.

The *Applied Sociology* curriculum is geared to meet the needs of students who are interested in social welfare, labor relations, government service, personnel administration, industrial relations, public relations and kindred vocations.

COMPREHENSIVE EXAMINATION

A social science major must pass a comprehensive examination in the social sciences before he will be recommended for graduation by the department.

Examinations are designed to demonstrate a student's ability to correlate the subject matter of the social sciences and to apply it in practical situations.

The examination is given once each school quarter by the Department of Social Science.

Sample programs for social science majors are shown below.

MAJOR IN HISTORY*

This major is designed especially for those desiring to pursue further study in the field of history.

*History 210, 213, and 222 which are required of all students during Freshman and Sophomore years must be included in the History Major. A minimum of 45 quarter hours in history is required for the History Major. In addition a total of 19 quarter hours in political science, sociology, economics or geography is required. It is suggested that students majoring in history take the majority of their electives in the social science and English field.

Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
History 211, 212, 221	3 (3-0)	3 (3-0)	5 (5-0)
History 223, 231 or 232, 233	3 (3-0)	5 (5-0)	3 (3-0)
Sociology 231	5 (5-0)	.....	.....
Minor or electives	3	10	12
	18	18	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
History 226	3 (3-0)	.....	.....
History 235, 237, 238	3 (3-0)	3 (3-0)	3 (3-0)
Economics 236	3 (3-0)	.....	.....
Sociology 242 .....	.....	.....	3 (3-0)
Political Science 232 or 231 .....	.....	5 (5-0)	.....
Geography 244	3 (3-0)	.....	.....
Minor or electives	6	6	12
	18	17	18

MAJOR IN APPLIED SOCIOLOGY***Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Economics 231, 232, 234	5 (5-0)	5 (5-0)	5 (5-0)
Sociology 231, 232, 233 or 131	5 (5-0)	5 (5-0)	3 (3-0)
Education 221, 226 .....	.....	5 (5-0)	5 (5-0)
Psychology 221, 226 .....	.....	5 (5-0)	5 (5-0)
Political Science 231	5 (5-0)	.....	.....
Minor or Electives .....	.....	.....	.....
	18	18	18

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Economics 236, 246 or 501, 502	3 (3-0)	3 (3-0)	3 (3-0)
Sociology 253; Mathematics 318	3 (3-0)	5 (5-0)	.....
Sociology 241, 242, 245	3 (3-0)	3 (3-0)	5 (5-0)
Political Science 232 .....	.....	5 (5-0)	.....
Minor or Electives	9	3	10
	18	19	18

*Students expecting to major in Applied Sociology should take the required courses listed by the School of Education and Science. There are no additional subjects required for the major other than those listed in the above curriculum.

Note: It is advised that students majoring in Applied Sociology choose minor in a closely related field. The social science minor requires a minimum of 38 quarter hours. This would include 18 to 20 hours of history and 20 hours from economics, sociology, geography and political science. The 15 hours of history required of Freshmen and Sophomores may be included in the history minor. Suggested courses for the social science minor are: History 210, 213, 222 and 221 or 232, Economics 231, Sociology 231, Geography 240, and Political Science 231 or 232.

Suggested Electives

Sociology 502, 503, 506	Home Economics 113, 122
Economics 233	Education 223, 225, 231, 233
Geography 241, 242, 244	Religion 211, 212, 213
History 237, 246	Philosophy 222, 223

MAJOR IN SOCIAL STUDIES

This major is designed especially for persons planning to teach in the secondary schools.

Junior Year	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
<i>Course and No.</i>			
Hist. 231, 232 Ancient and Medieval History .....	.....	5 (5-0)	5 (5-0)
Ec. 231, 232 Economics	5 (5-0)	5 (5-0)	.....
or			
Hist. 211, 212	3 (3-0)	3 (3-0)	.....
Sociology 231, 232, 242	5 (5-0)	5 (5-0)	3 (3-0)
Minor or Electives	5 (5-0)	.....	8 (8-0)

Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Geo. 240 Principles of Geography .....	.....	5 (5-0)	.....
Geo. 241 Regional Geography .....	.....	.....	5 (5-0)
Hist. 233 Latin American History .....	.....	.....	3 (3-0)
Pol. Sc. 231 Federal Government	5 (5-0)	.....	.....
Pol. Sc. 232 State Government .....	.....	5 (5-0)	.....
Minor or Electives	10 (10-0)	5 (5-0)	5 (5-0)

COURSES IN HISTORY**210. History of Civilization**

A general course surveying the main trends in history of western civilization and showing the development of ancient civilization and the subsequent expansion of medieval and modern Europe. Credit 5 (5-0).

211. Modern Europe

A survey course dealing with major factors and movements in the history of modern Europe. It deals with economic, social, political, religious, and intellectual problems in their relationship to the development of national states, growth of democracy and the expansion of Europe from 1500 to 1815. Lectures, collateral reading, special reports and map work. Credit 3 (3-0).

212. Modern Europe

A survey of the history and development of Europe from 1815 to the present. Credit 3 (3-0).

213. History of the Negro

This course begins with a brief survey of the African background of the Negro and traces him from Africa to America. It includes a study of his enslavement, with special emphasis on slavery in America, the Free Negro before 1860, abolition, and the Civil War with special emphasis on the part played by Negro troops, achievements since 1865, and forces in Negro progress. Credit 5(5-0).

221. American History

The economic, political and social development of the colonies and of the United States up to the Civil War. Attention is given to the early American settlers. Credit 5(5-0).

222. United States History

An intensive study of the political, social and economic history of the United States from the reconstruction period to World War I. Credit 5(5-0).

223. History of Reconstruction

An intensive study of the social, political and economic conditions of the United States during the years 1865 to 1895. Prerequisite: 15 hours of history. Winter. Credit 3(3-0).

226. History of England

A survey of the social and political development of England in the 16th, 17th, and 18th centuries. Credit 5(5-0).

231. Ancient History

This course is designed for those majoring in the field of history or who plan to teach history in secondary schools. It includes a study of the civilization and contributions of the people of the Orient, along the Nile, and of Greece and Rome. Prerequisite: 15 hours of history. Fall. Credit 5(5-0).

232. Mediaeval History

A history of Europe in the middle ages with particular attention to social and economic conditions and cultural and religious development. Prerequisite: 15 hours of history. Winter. Credit 5(5-0).

233. History of Latin America

A study of the rise and development of the Latin-American nations, with special attention to their relations with each other and with the outside world. Prerequisite: 15 hours of history or consent of instructor. Spring. Credit 3(3-0).

234. Contemporary American History

Analysis of important problems in American history since World War I, with emphasis on the domestic and foreign policy. Credit 3(3-0).

235. History of Eastern Europe

A general course in the history of Eastern Europe, the Balkans and Russia from the period of the Romanoffs to the present. Credit 3(3-0).

237. American Constitutional History

A study of the constitutional development of the United States from 1789 to the present time. Major Supreme Court decisions affecting constitutional changes will be given special attention. Credit 3(3-0).

238. History of North Carolina

A general survey of North Carolina from colonial times to the present. Credit 3(3-0).

246. History of the Far East

A survey of the economic and political development of the far eastern countries with emphasis on the twentieth century. Prerequisite: 15 hours of history. Credit (3-0).

POLITICAL SCIENCE

211. Introduction to American Government

This course is designed to acquaint the student with the organization and administration of federal, state and local government. It is intended especially for non-Social Science majors interested in understanding how our government operates. Fall or Winter. Credit 3(3-0).

231. Federal Government

A general introductory course in the government of the United States designed to acquaint the student with the more important facts of the organization and working of Federal institutions and to give a foundation for more advanced work in government. Discussed are principles of political science, the state, the nation, the government, constitution, the federal executive, congress, and courts. Prerequisite: 15 hours of Social Science or consent of instructor. Fall. Credit 5(5-0).

232. State and Local Government

A study of state constitutions and of the structure and functions of state and local government in the United States. Prerequisite: 15 hours of Social Science or consent of instructor. Winter. Credit 5(5-0).

GEOGRAPHY

240. Principles of Geography

This course is a survey of the principles of geography. The earth, air, sea, and land are studied with particular emphasis upon the physiographic features of North America. Credit 5(5-0).

241. Regional Geography of Anglo-American

A study of the geographic regions of the United States and Canada with special emphasis on the social, political and economic adjustment of man to the south, in the light of its geographical setting. Credit 5(5-0).

242. Resources and Industries of United States

A study of the physical resources of the United States and its possessions with emphasis on the utilization and conservation of power, labor, minerals and soils. Credit 3(3-0).

243. Economic Geography of Latin America

This course deals with the agricultural and industrial resources of Latin America with special emphasis on such countries as Brazil, Argentina, Mexico and Cuba, the utilization of Negro labor, and the assimilation of African culture into Latin-American life. Credit 3(3-0).

244. Political Geography

Theories of political geography. Territorial changes and their political significance. Problems in political unification, centralization and federation. Relations between constituent parts of Empire Commonwealth. Credit 3(3-0).

SOCIOLOGY

231. Principles of Sociology

Principles and laws of sociology; the literature in which they are discussed, and the key concepts about which they center. Credit 5(5-0).

232. Social Problems

An analysis of changing aspects of our social life and the problems created for the individual and society. Special emphasis upon sociological problems and social planning. Credit 5(5-0).

233. Community Organization

A study of the demographic factors, family life, standards of living, social attitudes and values, and the trends, with their implications toward urbanization. Prerequisite: Sociology 231 or consent of instructor. Credit 3(3-0).

234. Juvenile Delinquency

A study of criminogenic homes, communities and general conditions conducive to delinquency; the nature of delinquent behavior, viewed according to legal norms and by sociological and administrative standards. Critical analysis of theories and research in the etiology of delinquent behavior. The relationship of cause and treatment is considered. Credit 3(3-0).

235. Criminology

Causative explanations and the nature of crime and criminal behavior; society's reaction toward criminal and anti-social acts; critical analysis of theories and research in the etiology of criminal behavior, and trends in the treatment and disposition of criminals. Credit 3(3-0).

236. Culture and Personality

The nature of culture. The factor of differences in human behavior and personality as related to cultural variability. Comparisons of selected pre-literate and modern groups in respect to social structure, social organization and socialization of children. Lectures, special reports, films, discussion groups. Prerequisites: Sociology 231 and a course in elementary psychology. Credit 3(3-0).

240. Social Psychology

Social application of psychology; social stimulation and response; formation of attitudes involved in cooperation-competition, leadership-submission, frustration-aggression, crowd and mob phenomena. Credit 5(5-0).

241. Marriage and the Family

A study of marriage problems and family living with special attention being given to items such as personality, courtship, family budgeting, divorce, parenthood. Credit 3(3-0).

242. Minority Groups in the United States

An examination of the composition, status, and relations of racial and other minority groups in the United States; trends and policies; analysis of recent research. Credit 3(3-0).

245. Field Work in Social Administration

This course is designed to provide practical experience and counseling in the application of principles and techniques in various areas of social administration under the direction of the instructor in cooperation with administrators of selected social agencies in the community. The course will provide two lectures per week, with three hours assigned for practical experience. Credit 5(2-6).

253. Introduction to Sociological Research

Delineation of a research problem in Sociology. Survey and uses of available sources of data. Consideration of sampling procedures of Sociology research. Field methods for collecting original data. Graphic presentation of statistical data. General prerequisites must include sociology 231. Credit 3(3-0).

502. Current Economic and Social Problems

A practical course in applied economics and sociology dealing with analysis of present trends in government, economics, industry, agriculture, and the social implications of these trends. Current problems of everyday life are emphasized. Prerequisite: 15 hours of social science. Credit 3(3-0).

503. Research Problems

Individual problems for research in each student's field of interest—labor, industry, agriculture, unemployment, old age, etc. Prerequisite: 15 hours of social science. Credit 3(1-4).

506. Population Problems

Introduction to population study. The development of official population data; principal sources of information; methods of analysis; survey of contemporary population movements.

ECONOMICS

231. Principles of Economics

This course surveys the general field of Economics. It considers the nature and scope of Economics, basic economic institutions, and economic characteristics of present society. Credit 5(5-0).

232. Economic Problems

This course gives detailed consideration to major areas in modern economic life. The implications of public ownership, monopoly, organized labor and business combinations are stressed as modifications of the ideal competitive economy. Prerequisite: Economics 231 or consent of instructor. Credit 5(5-0).

233. Money and Banking

A general survey of the role of banking in the economy. The relationship of the banking system as a business enterprise to its role as the regulator of business activity; the nature of money and international exchange. Credit 5(5-0).

234. Labor Problems

An introductory course dealing with the efforts of working people to improve their relative position in the economy. The influence of unionism and of governmental participation are emphasized. Particular attention is directed to the collective bargaining process and to labor legislation. Credit 5(5-0).

236. Consumer Economics

This course is designated to show the importance of the consumer in the American economy, especially as a force for economic betterment; necessity for sound budgeting of income and sound spending policies; Consumer problems of Negroes. Credit 3(3-0).

254. Statistical Methods in Social Science

An introduction to research methods; social statistics; analysis of methods used by social scientists. Credit 4(2-4).

245. Seminar in Economics

An intensive study of significant labor and industrial problems and literature. Lectures, student reports and discussions. Open only to majors and minors in the social sciences. Credit 2(2-0).

246. Government and Economic Life

A survey of the rationale and effects of the impact of government in major areas of economic life. Regulation of industry and of labor relations are stressed, with implications of such activities for the traditional economic institutions of America. Prerequisite: Economics 281 or consent of instructor. Credit 3(3-0).

TECHNICAL INSTITUTE

S. C. SMITH, *Dean*

The aim of the Technical Institute is to train skilled tradesmen and technicians who will take their places in industry as producers and contributing citizens.

It is designed for those students who desire to prepare themselves to enter industry upon graduation.

The courses offered range from two to three years in length, depending upon the major field of interest.

In addition to training in the manipulative skills, technical, related and general education courses are stressed for all students in the department.

The Technical Courses leading to certificates are: Auto-Mechanics, Cabinet-Making and Upholstering, Carpentry, Dry Cleaning, Electric Wiring, Laundry Management, Machine Shop, Masonry, Painting and Decorating, Photography, Plumbing and Steam Fitting, Radio and Television Servicing, Secretarial Science, Sheet Metal, Shoe Repairing and Leather Work, Tailoring, and Welding.

In all departments, shop equipment and special tools will be furnished by the college but students are expected to furnish individual tools and protective clothing as required by the department.

VOCATIONAL TRADE COURSES

AUTO MECHANICS

Training Objectives

This is a carefully organized course designed to prepare young men and women to become skilled mechanics. The practical side of the course has been so emphasized that upon the completion of the trade, students will be qualified to become owners or managers of an auto service business as well as skilled mechanics in this field. A certificate will be awarded to those students satisfactorily completing the course.

Length of the Course

Three years of nine months each.

Amount of time required in shop

Twenty hours per week, thirty-six weeks per year.

CURRICULUM

Auto Mech. 411, 412, 413, 421, 422, 423, 431, 432, 433	90 hrs.
Math. 435, 436 or 311, 312	6 hrs.
Eng. 211, 212, 213	15 hrs.
M. Sc.	12 hrs.
Physical Ed.	6 hrs.
M. Shop M. E. 328, 329, 330	6 hrs.
Welding 311, 312, 313	9 hrs.
B. Adm.	10 hrs.

Suggested Electives

Ec. 231, 232, 234

B. A. 332, 333, 337, 339, 346, 351, 335

COURSES

411. Orientation

General information and shop procedures on care and use of shop tools and equipment. Fundamentals of the internal combustion engine. Credit 10(4-16).

412. Maintenance and Service

Lecture on the principles of operation and maintenance of all chassis parts. Laboratory work will be on the disassembly and reassembly of transmission, rear ends, universal joints, shock absorbers, and braking systems. Credit 10(4-16).

413. Power Plant

Lecture, demonstration and laboratory work will be undertaken on the principle of the four-cycle engine, fuel and cooling systems. Credit 10(4-16).

421. Power Plant

General shop practice is designed to give a student experience in general: overhaul of engine including adjusting of bearings, grinding valves, and installing rings. Credit 10(4-16).

422. Power Plant

Instruction will be given on use of the boring bar, connecting rod aligners, use of cylinder hone, reamers, and fitting of pistons. Credit 10(4-16).

423. Electrical System

The fundamental principles of the electrical system, including magnetism, generators, starters, voltage and current regulators, automatic chokes, ignition wiring and batteries will be studied. Credit 10(4-16).

431. Body Work

Lecture and demonstration on the use and care of body tools. Laboratory projects designed to give skills in body work. Credit 10(4-16).

432. Painting

This course is designed to give the student experience and knowledge of spraying of various enamels and lacquers. Credit 10(4-16).

433. Optional Specialization

During this quarter the student will do special projects in that phase of Automobile Mechanics in which he is especially interested. Credit 10(4-16).

CABINETMAKING AND UPHOLSTERING**Training Objectives**

To develop skilled workers in the manufacturing and repairing of furniture and cabinets. English, mathematics and drafting are required according to the needs of the students.

Length of Course

Three years of nine months each.

Amount of Time in the Shop per Year

Twenty hours per week for thirty-six weeks.

CURRICULUM

Cabinetmaking 411, 412, 413, 421, 422, 423, 431, 432, 433	90 hrs.
Eng. 211, 212	15 hrs.
Math. 435, 436 or 311, 312	6 hrs.
M. E. 311, 312	6 hrs.
Vocational Drawing I. A. 331, 332, 333	9 hrs.
B. Adm.	10 hrs.
M. Sc.	12 hrs.
Phy. Ed.	6 hrs.

Suggested Electives

M. E. 327.
I. A. 324.
Carp. 311, 312.

COURSES**First Year****411. Care and Use of Tools**

This course includes studying all common woodworking tools, sharpening cutting tools—grinding and whetting plane bits and chisels, filing auger bits, and sharpening saws. Projects involving the fundamental principles of joinery are provided. Credit 10(4-16).

412. Elementary Joinery

The student works on projects involving joinery with a view of gaining a high degree of dexterity. Square and circular table tops are built up with the use of glue. The work is performed mostly by hand. Credit 10(4-16).

413. Advanced Joinery

Much practice is given the student in the construction of projects involving mortise and tenon joints and dovetail joints. Projects such as tables, stands, cabinets, and chests give the student an opportunity to make practical application of joinery and at the same time to gain useful skills. Credit 10(4-16).

Second Year**421. Wood Turning**

Care and use of woodworking machinery. Construction of a few simple projects involving spindle turning. Emphasis is placed on gaining the facility with the turning tools and in duplicating pieces. Credit 10(4-16).

422. Wood Turning

Additional practice in spindle turning. Practice in face plate turning and in taper turning. Repairing broken tables and chair legs so as to get experience in duplicating parts. Credit 10(4-16).

423. Wood Finishing

Filling, staining, waxing, varnishing, and enameling, refinishing of furniture. Credit 10(4-16).

Third Year

431. Upholstering

Projects involving the various types of caning, seat weaving and upholstery without springs. Credit 10(4-16).

432. Upholstering

Upholstering frame structures, springing up, methods of fastening, webbing, stuffings, covering; the use of gimp, nails, springs, hard-edge upholstery, and spring-edge upholstery. Credit 10(4-16).

433. Cabinetmaking and Upholstering

The development of a comprehensive project involving cabinet work, finishing, and upholstering. This project should involve most of the fundamentals of cabinetmaking and upholstery. Credit 10(4-16).

CARPENTRY

Training Objectives

This course aims to develop in the student the knowledge and skills necessary for practical work in carpentry. Related technical information. English, mathematics and drafting are stressed.

Length of Course

Three years of nine months each.

Amount of Time in the Shop Per Year

Twenty hours per week for thirty-six weeks.

CURRICULUM

Carpentry 411, 412, 413, 421, 422, 423, 431, 432, 433	90 hrs.
English 211, 212, 213	15 hrs.
Math. 435, 436 or 311, 312	6 hrs.
M. Sc.	12 hrs.
Mech. Drawing 311, 312	6 hrs.
B. Adm.	10 hrs.
Con. & Specifications M. E. 327	3 hrs.
B. M. 311, 312	6 hrs.
Phy. Ed.	6 hrs.
Electives	5 hrs.

Suggested Electives

B. A. 346, 351, 357, I. A. 326.

Math. 315.

Voc. Drawing I. A. 331, 332.

COURSES**First Year****411. Benchwork**

This course consists of the study and practice of the fundamental operations in woodworking. Emphasis is placed upon the care and use of the most common woodworking tools. Credit 10(4-16).

412. Benchwork

Projects involving the various types of joints used by the carpenter are selected. Also the proper care and use of carpentry tools is stressed. Credit 10(4-16).

413. Blueprint Reading and Estimating

Principles of orthographic projection. Drawing of plans and details of buildings. Estimating quantities. Credit 10(4-16).

Second Year**421. House Framing**

Intensive study will be made of the framing square and its special uses to the carpenter. Methods of placing sills, type of girders, placing and bracing studs will be studied. Credit 10(4-16).

422. House Framing

Practical work in door and window framing will be given. The various types of roofs will be constructed in miniature. Application of the steel square to roof construction will be emphasized. Credit 10(4-16).

423. House Framing

This course involves study of western or platform construction, balloon and braced frame construction, the making and placing of door and window frames, covering floors, insulating materials, interior trim, selecting and installing hardware. Credit 10(4-16).

Third Year**431. Stair Building**

Jobs involving the laying out, cutting and placing of straight run stringers, platform flights, dog leg flights, treads, riser, newels, skirting boards, rails, balusters, and forms for concrete work. Credit 10(4-16).

432. Roof Construction

Jobs involving the cutting, placing and nailing of common, jack, valley and hip rafters by the use of the steel square. Credit 10(4-6).

433. Building Repair

A certain amount of repair work is required. Only such repair work is selected as will give the student a fundamental understanding and appreciation of the principles of building construction. Credit 10(4-16).

DRY CLEANING

Training Objective

The purpose of this course is to prepare young men and women to become skilled technicians in the field of dry cleaning.

Time Required

Twenty hours per week for six quarters.

CURRICULUM

Dry Cleaning 411, 412, 413, 421, 422, 423	60 hrs.
English 211, 212	10 hrs.
Math. 311, 312	10 hrs.
Chem. 111, 112	10 hrs.
Bookkeeping	10 hrs.
Plumbing 311, 312 or Tailoring 311, 312	6 hrs.

COURSE OUTLINE

411. Dry Cleaning Room

This course is designed to give a brief history of Dry Cleaning and study of equipment, solvents, marking and receiving systems, separating and classifying work, with procedures in extracting, tumbling, filtration, and distillation. Care and maintenance of equipment are emphasized. Credit 10(4-16).

412. Spotting

Emphasis will be placed on simple and rough spotting, methods of removing spots, study of fibers and fabrics, experimental studies of stains, dyes, bleaches, and chemicals used in dry cleaning. Credit 10(4-16).

413. Wet Cleaning

This course aims to emphasize the different methods of wet cleaning, duties of the wet cleaners, practice and procedures in wet cleaning trousers, coats, dresses, shirts, etc. Study of the use of bleaches, dyes and chemicals will be continued. Special attention will be given to treatment of prints, knits, taffeta, and other novelty garments. Methods of drying and semi-finishing. Credit 10(4-16).

421. Finishing

The fundamentals of finishing woolen garments, study of equipment used, the treatment of designs of garments, and reshaping wet cleaned garments. A study of the equipment used for silks and the simple and more difficult operations in finishing garments of silk. Credit 10(4-16).

422. Applied Science

Study of solvents and reagents. Study of fabrics, cotton, wool, silks, etc. Chemistry as it is related to Dry Cleaning, uses and reaction. The principles of engineering and the effect of relative humidity on cleaning operations. Credit 10(4-16).

423. Plant Layout, Management, and Maintenance

Study of the principles and practices of plant layout, installation of equipment and maintenance. Plant Management and operations including labor, supplies, bookkeeping, advertising and claims adjustment. Credit 10(4-16).

ELECTRICITY**ELECTRIC WIRING AND MOTOR REPAIR****Training Objective**

To prepare persons to work as electricians in wiring and installation.

Length of Course

Eight quarters, three months each.

CURRICULUM

Electric Wiring 411, 412, 413, 421, 422, 423, 431, 432	80 hrs.
Math. 311, 312	6 hrs.
Eng. 211, 212	10 hrs.
Bus. Adm.	10 hrs.
M. E. 311, 312	6 hrs.
Carp. 311, 312	6 hrs.
Economics	5 hrs.
Electives	8 hrs.

Suggested Electives

Phys. 311, Welding 311, 312, M. E. 328, 329, I. A. 347.

COURSE OUTLINE

411. D. C. and A. C. Circuits with intensive study of Ohm's Law; power and energy, commercial wire, magnets and magnetism, and magnetic circuits, including circuit theory. Credit 10(0-20).

412. Light and Power Wiring

This includes open wiring, non-metallic. Sheathed conductors; lighting circuits, flexible metallic conductors, rigid conduit, surface raceways, duct wiring, and power circuits. Credit 10(0-20).

413. Illumination—N. E. Code.

Lighting design for residence, commercial and public interiors, introduction to the National Electric Code. Credit 10(0-20).

421. Wiring Design and N. E. Code

Intensive study of the National Electric Code and study of the design of electrical layouts based on standards, lighting and adequacy. Credit 10(0-20).

422. Electric Motors

Intensive study of the principles of electric motors and appliances. Credit 10(0-20).

423. Armature Winding

Study of split-phase, single-phase, and poly-phase motors, use of coil winding machines, testing and baking. Credit 10(0-20).

431. Household Appliances

Intensive study and laboratory work in the construction and repair of electrical household appliances. Credit 10(0-20).

432. Special Electric Equipment

Intensive study and laboratory practice with special emphasis on the interests of the student. Credit 10(0-20).

LAUNDRY MANAGEMENT**Training Objective**

The purpose of this course is to train individuals as skilled workers, managers and operators of a laundry plant.

Length of Course

Eighteen months. Students are required to spend 20 hours per week in the shop and laboratory.

CURRICULUM

Laundry Mgt. 411, 412, 413, 421, 422, 423	60 hrs.
Math. 311, 312 or 435, 436	10 hrs.
Eng. 211, 212	10 hrs.
Chem. 111, 112	10 hrs.
Bus. Adm.	5 hrs.
Plumb. 311, 312	6 hrs.
Economics	5 hrs.
Phy. Ed.	6 hrs.
Military or Air Science	12 hrs.

COURSE OUTLINE**411. Applied Science**

Study of washroom chemistry, detergents, hot and cold water, soap, bleaches, sours, and bluing. Study and handling of fabrics, water softner and sanitation. Shop practice. Credit 10(4-16).

412. Identification

Receiving, marking and inspection of garments. Assorting and classification, marking machine. Shop practice. Credit 10(4-16).

413. Washroom Procedures

Proper loading of washer, extractors and tumblers, working formula, soap solutions, bleaches, sour, stain removing, starching, washroom speeds and temperatures. Shop practice. Credit 10(4-16).

421. Finishing

Flat work ironers, garment presses and shirt units, hand finishing, folding, standard lays in pressing and pleating. Shop practice. Credit 10(4-16).

422. Maintenance of Equipment

Cleaning, greasing and adjustments. Padding of machines, care and use of marking machines. Inspection methods and minor repairs. Shop practice. Credit 10(4-16).

423. Plant Management

Labor and supplies. Payrolls, bookkeeping methods. Storage of supplies and finished bundles. Adjustment of claims. Shop practice. Credit 10(4-16).

MACHINE SHOP PRACTICE**Training Objectives**

To develop skilled workers in the use of various machine tools, and as specialized machine operators and journeymen machinists.

Length of Course

Eight quarters of three months each.

Amount of Time in Shop

Twenty hours per week.

CURRICULUM FOR MACHINE SHOP PRACTICE

Machine shop 411, 412, 413, 421, 422, 423, 431, 432	80 Hrs.
English 211, 212	10 Hrs.
Math. 311, 312 or 435, 436	10 Hrs.
Welding 311	3 Hrs.
Drawing 311, 312	6 Hrs.
B. A. 351, 346	10 Hrs.
Economics 234	5 Hrs.
I. A. 326	3 Hrs.
M. S.	12 Hrs.
Phy. Ed.	6 Hrs.
Sheet Metal 311	3 Hrs.

COURSE OUTLINE

411. Machine Shop Practice

A general introduction to machine shop methods. A study of small precision tools and basic machine tools. Construction of small projects. Credit 10(2-18).

412. Machine Shop Practice

A detailed study of the engine lathe, its operations and functions. Construction of projects requiring the use of basic machine tools. Credit 10(2-18).

413. Machine Shop Practice

A detailed study of the shaper and drill press and related information. Construction of projects requiring the use of basic machine tools. Credit 10(2-18).

421. Machine Shop Practice

A detailed study of the milling machine, and phases of milling machine work and related information. Construction of projects requiring the use of basic machine tools. Credit 10(2-18).

422. Machine Shop Practice

A detailed study of the grinding machine and grinding in general. Construction of projects requiring the use of basic and advanced machine tools. Credit 10(2-18).

423. Machine Shop Practice

General Machine Shop work requiring the use of all machines. A detailed study of the steels and other material used in machine shops. Emphasis is placed on skill and accuracy as is practiced in industry. Credit 10(2-18).

431. Machine Shop Practice

Continuation of machine shop 423 and a detailed study of the heat treatment of steels. Credit 10(2-18).

432. Machine Shop Practice

Construction of projects requiring the utmost skill and accuracy. Emphasis is placed on skill, accuracy and speed. Credit 10(2-18).

MASONRY

Training Objectives

The main objective of the Masonry Department is to induce desirable young men to enter the masonry trades, bricklaying, tile setting, cement finishing and plastering, point out to them what these trades have meant to civilization throughout the ages.

There are four main basic steps in this objective through which the student will be taken to accomplish this aim.

Step 1—Preparation. The purpose of this step is to get the student interested in what is to be taught.

Step 2—This gives the instructional material in detail.

Step 3—Application. This gives the student experience in performing the operations being taught and to give the instructor an opportunity to emphasize any points that the student may not have acquired.

Step 4—Testing and Inspecting. Testing the student to make sure he has learned well what has been presented in the lesson.

Length of Course

Three years of nine months each depending upon student's experience and ability.

Amount of Time in Shop

At least twenty hours per week, thirty-six weeks each year.

CURRICULUM

Masonry 411, 412, 413, 421, 422, 423, 431, 432, 433	90 Hrs.
Eng. 211, 212, 213	15 Hrs.
Math. 435, 436 or 311, 312	6 Hrs.
M. Sc.	12 Hrs.
Phy. Ed.	6 Hrs.
Mech. Drawing, M. E. 311, 312	6 Hrs.
Carp. 311, 312	6 Hrs.
Cont. and Specifications M. E. 327	3 Hrs.
B. Adm.	10 Hrs.

Suggested Electives

- Art 311, 312
- Econ. 231, 234
- Math. 315
- Voc. Drawing I. A. 331, 332, 333

COURSES

411. Bricklaying

Spreading of mortar and study of various bonds, history of the trade, materials of the trade, details of construction, and drawing and construction of walls. Credit 10(2-18).

412. Bricklaying

Construction of foundations, footings, flat arches, piers, walls of different thickness, columns, and estimating the cost of projects. Credit 10(2-18).

413. Bricklaying

Scaffold building, pre-casting of blocks and other units. Credit 10(2-18).

421. Bricklaying

This course consists of building chimneys, fireplaces and mantels, porches and steps. Details of construction. Credit 10(2-18).

422. Bricklaying

This course consists of ornamental work in bricklaying, such as basketweave, herring bone, saw tooth, and dental courses, trade science. Credit 10(2-18).

423. Bricklaying

Consists of laying of glass block, Roman brick with special emphasis put on window and door jamb openings. The student should have a fair knowledge of the materials of the trade, details of construction, drawing and blueprint reading, estimating, and industrial economics. Credit 10(2-18).

431. Bricklaying

This course consists of making cement forms, cement steps, walks and floors, the mixing of various types of cement mortar and concrete, reinforcing and rigging and estimating. Credit 10(2-18).

432. Bricklaying

Mixing various types of mortars, construction of hollow tile walls, tile setting, history and use of tile, details of construction and estimating. Credit 10(2-18).

433. Bricklaying

Consists of preparation of mortar, scratch coat, brown coat, sand finishing, stucco, white finishing, use of various laths such as metal, rock, corner beads; trade science and estimating. Credit 10(2-18).

PAINTING AND DECORATING

Training Objectives

This course is designed to equip the individual with the art, skill and technical knowledge necessary to enter into and advance in the general house painting and decorating trade.

Length of Course

The basic training is two years of nine months each.

Amount of Time in Shop

Twenty hours per week, thirty-six weeks per year.

CURRICULUM

Painting 411, 412, 413, 421, 422, 423	60 Hrs.
English 211, 212	10 Hrs.
Math. 435, 436 or 311, 312	6 Hrs.
Military Science	12 Hrs.
Carp. 311, 312	6 Hrs.
B. M. 431	3 Hrs.
Electives	6 Hrs.

Suggested Electives

Mechanical Drawing 311, 312
 Contracts and Specifications 327

COURSES

411. Exterior Painting

A general procedure in the methods of exterior house painting. The course includes training with the use and care of tools, equipment and materials used in the trade; a study of the types of surfaces encountered; the preparation of these surfaces; and the preparing, mixing, and application of the various types of exterior paintings. Study is also given to the defects of failures of paints and their remedies. Glazing is taught. Health and safety factors are stressed. Credit 10(2-18).

412. Interior Painting

The theory and practice of interior house painting. Much attention is given to the study of colors, including color harmony and the mixing and matching of colors. All types of interior paints, their composition, characteristics, and properties are studied, as well as the surfaces suitable for their use. The student will be acquainted with all the tools, materials and equipment used in interior painting. Credit 10(2-18).

413. Paperhanging

A complete course in the fundamentals of hanging paper and other wall coverings. Attention is given to surface preparation, tools and equipment, mixing sizes and paste, table work, and hanging the paper and other wall coverings. Credit 10(2-18).

421. Spray Painting and Advanced Interior Painting

The technique of operating and caring for spray equipment. The different types of spray guns will be studied, as well as the materials suitable for spray application. A continuation of painting 412 designed to give further theory and practice in interior house painting. Much attention is given to this part of the course, because of its significant importance to the painting and decorating trades. Credit 10(2-8)

422. Decorative Finishes

A course dedicated to the fine points and decorative finishes employed in the trade. The course includes a complete study of color, including color combinations, the Munsell color system, color mixing and matching, the psychology of color, effects of colors and styling with colors. Glazing, antiquing, stippling, stenciling, gilding, marbleizing, graining and wood finishing will be taught in this course. Credit 10(2-18).

423. Estimating and Job Management

A course to teach the student methods of estimating the materials, working hours, and finally a cost for doing a job. The procedure of supervising or managing the job will be given much stress. Credit 10(2-18).

PHOTOGRAPHY**Training Objectives**

This course offers practical training in the field of Commercial and Portrait Photography, based on the principle of "learning while doing," where the student learns through demonstrations and a personal application of the principles involved with the problem; lectures being kept to a minimum. Training is in all phases of photography, progressing from the basic principles covering the camera and its operation, photographic optics, lenses, shutters, emulsions, daylight and artificial lighting, composition, photographic chemistry, filters and their uses, contact and projection control, toning and negative retouching. Classes are limited in size to permit more individual attention. A certificate will be awarded to those students satisfactorily completing the course.

Length of Course

Two years of nine months each.

Amount of Time in Shop

A minimum of 20 hours per week for 36 weeks each year.

CURRICULUM

Photography 411, 412, 413, 421, 422, 423	60 hrs.
Math. 435, 436 or 311, 312	6 hrs.
English 211, 212	10 hrs.
Phy. Ed.	6 hrs.
B. Adm.	10 hrs.
M. Sc.	12 hrs.

Suggested Electives

Art 311, 312, 313

Mech. Drawing, M. E. 311, 312

Econ. 231, 234

B. Adm. 337, 335, 351, 345

COURSES

411. Basic Fundamentals

Instruction in the use of Speed Graphic Camera, Commercial View Cameras and Commercial Film. Choice of lenses and shutters in relationship to their light transmission, depth of field and hyperfocal distance. Film emulsions and negative processing methods. Credit 10(4-16).

412. Synchroflash Photography, Filters and Photographic

Continuation of 411 with additional study and work with multiple flash, surface reflection problems, textures and surfaces, contact printing and enlarging technique. Filters and their use. General laboratory technique and progress assignment. Credit 10(4-16).

413. Light Control and View Camera Technique

This course allows the student to do basic portraiture lighting, artificial and natural. Illumination and its control along with composition and the view camera. Students will be given additional work in negative retouching. Credit 10(4-16).

421. Portrait Photography and Negative Retouching

This course deals with modern portraiture covering portrait studio view cameras, portrait films, practical optics, basic posing and directing, portrait lighting, enlarging techniques, group portraiture and advanced negative retouching. Credit 10(4-16).

422. Illustrative and Publicity Photography

This course is designed for the student to do assignments in press, advertising and publicity photography. Additional instruction will be given in etching, spotting, mounting and print finishing, materials and equipment. Credit 10(4-16).

423. Advanced Technique

In this course of advanced techniques are taught special background and photomontage work, coloring with oil, electronic flash, bridal photographs, equipping the studio and studio management. Credit 10(4-16).

PLUMBING AND STEAMFITTING

Objectives

The course is designed to prepare skilled mechanics in the field of plumbing and steamfitting. In addition to courses listed, the department reserves the right to require trainees to spend at least one summer on grounds for practical work, unless they can furnish satisfactory evidence that they have had adequate practical experience in their trade.

Length of Course

Three years of nine months each depending upon the student's experience and ability.

Amount of Time in Shops

Twenty hours a week, 36 weeks per year.

CURRICULUM

Plumbing 411, 412, 413, 421, 422, 423, 431, 432, 433	90 hrs.
Eng. 211, 212	10 hrs.
Math. 435, 436 or 311, 312	6 hrs.
M. Sc.	12 hrs.
M. E. 311, 312	6 hrs.
Welding 311, 312	6 hrs.
B. A. Electives	10 hrs
Phy. Ed.	6 hrs.
Electives	8 hrs.

COURSES**First Year****411. Care and Use of Tools**

History of Plumbing: Duties and responsibilities of a plumber. Cutting, threading, reaming, and simple fittings. Study of plumbing material. Practical applications. Credit 10(4-16).

412. Drainage and Vent Pipe Installations

Drainage pipe arrangements. Supports and connections between pipes. Applications, sewage disposal. Prerequisite: Plumbing 411. Credit 10(4-16).

413. Traps in Drainage Systems

Installation of traps and branch connections. Minor repairs. Prerequisite: Plumbing 412. Credit 10(4-16).

Second Year**421. Plumbing Laws and Regulations**

Wiping joint, soldering and lead work. Blueprint reading. Prerequisite: Plumbing 413. Credit 10(4-16).

422. Water Supply

Cold and hot water. Water treatment method and purification. Prerequisite: Plumbing 421. Credit 10(4-16).

423. Estimating and Installation

This course consists of determining the cost of labor and materials for various installations. Prerequisite: Plumbing 422. Credit 10(4-16).

Third Year**431. Steam and Hot Water**

The various heating systems. Tools and equipment used in steam-fitting. Mechanical equipment of buildings. Prerequisite: Plumbing 432. Credit 10(4-16).

432. Steam and Hot Water

Continuation of 431. Prerequisite: Plumbing 431. Credit 10(4-16).

433. Copper Tubing and Fittings

Study and use of copper fittings. Soldering and lead work. Applications. Prerequisite: Plumbing 432. Credit 10(4-16).

RADIO REPAIR AND TELEVISION**Training Objective**

The aim of this course is to train servicemen and technicians in radio and television servicing. Emphasis is placed on acquiring a thorough knowledge of basic electrical theory. This course is designed to equip the student with skills and technical knowledge for positions in industry or for operating private business. Beginners are required to complete the radio courses before entering the advanced courses in television.

Length of Course

Nine quarters of three months each. Five quarters in radio, four quarters in television.

Amount of Time in Laboratory

A minimum of twenty hours per week.

CURRICULUM

Radio Repair and Television 411, 412, 413, 421, 422, 423, 431, 432, 433	90 hrs.
English 211, 212	10 hrs.
Mathematics 311, 312	10 hrs.
M. E. 311, 312	6 hrs.
B. Adm.	10 hrs.
M. E. 328, 329	6 hrs.
I. A. 326, 327	6 hrs.
Phy. 311, 312, 313	15 hrs.
Phy. Ed.	6 hrs.
Military or Air Science	6 hrs.

COURSE OUTLINE

411. Alternating and Direct Currents

For direct current a careful study is made of the theory and operation of primary and secondary batteries, Ohm's Laws, Kirchnoff's Laws, series and parallel resistance. In alternating, a special study is given in impedance, admittance, susceptance, series and parallel circuits, transformers, alternators, motors, rectifiers and filters. A special study is also given to permanent and electro-magnetism. Credit 20(4-16).

412. Vacuum Tube Characteristics

A study of the theory and emission of electrons which includes the characteristics and functions of the following vacuum tubes: Diode, Triode, Tetrode, Pentode, Beampower, and Cathode-Ray. Credit 20(4-16).

413. Basic Electronic Circuits

A study of power supplies which includes both half and full-wave rectification. A special study is also given to audio amplifiers, intercommunication system, auto power supplies, oscillators, and detectors. Credit 20(4-16).

421. Radio Circuits

This course covers the study of the tuned radio frequency receiver and also the superheterodyne receivers. Circuits of A.C., A.C.-D.C., portables and automobile receivers are studied and analyzed fully in detail in both the classroom and laboratory. Credit 20(4-16).

422. Basic Radio Test Equipment and Shop Technique

A careful study is given to teaching the student how to use the voltmeter, ammeter, ohmmeter, signal generators, oscilloscopes, etc. Special instruction is also given the student as how to operate a shop adequately and efficiently. Credit 20(4-16).

423. Fundamentals of Television and Basic Test Equipment

This course is a comprehensive coverage of the fundamentals of television transmitters and receivers. The past, present and future developments of television are covered in this course.

The basic test equipment used in television service is taught in order to prepare the student for future employment in the service business. Credit 20(4-16).

431. Television Servicing

General trouble-shooting, test pattern analysis and receiver adjustment is first taught and after the student has made progress along these lines he is then trained to make the necessary repairs and return the receiver to its original condition. Credit 20(4-16).

432. Shop Technique

In order that the student will be prepared to meet many special problems of running a service business, methods of setting up a modern shop are covered. A study is made of inventories, customer relations and how to manage a service business are taught. Credit 20(4-16).

433. Special Problems

The last quarter is spent in handling special problems in service, such as U. H. F., color, antenna installation and many other problems that are common to a fast growing industry such as television. A study is made of employment trends and the student is aided in obtaining employment. Credit 20(4-16).

SHEET METAL AND ROOFING**Outline of Course****Training Objectives**

The course is designed to provide technical information necessary, along with practical work, to give the student a thorough knowledge of the work and well-rounded experience in the field of Sheet Metal and Roofing.

Equipment

All large and permanent equipment will be furnished by the school. Students will be expected to furnish individual tools and overalls, as required for the course.

Length of the Course

The basic training is two years of nine months each.

Amount of time required in Shop

Twenty hours per week, thirty-six weeks per year.

CURRICULUM

Sheet Metal 411, 412, 413, 421, 422, 423	60 hrs.
English 211, 212	10 hrs.
Applied Mathematics 435, 436 or 311, 312	6 hrs.
Mechanical Drawing 311, 312	6 hrs.
Military Science	12 hrs.
Electives	8 hrs.

COURSES**411. Basic Sheet Metal**

A study of the use and care of tools and machines, processes relating to shop jobs, with emphasis placed on work with hand tools. Credit 20(2-18).

412. Line Development and Intersections

Construction methods used in fabricating sheet metal jobs, with emphasis on machines and sheet metal layouts. Credit 20(2-18).

413. General Sheet Metal

Designed to meet the needs of students who plan to enter sheet metal work on a commercial basis. Knowledge and skills relative to sheet metal tools, machines, operation and materials, units of work involving sheet metal jobs that are appropriate for general practice. Credit 20(2-18).

421. Round Pipe Work

Layout and fabrication of various degrees, elbows of any number of pieces and of both regular and irregular shapes, practices in the installation of pipe and pipeless furnaces, and a study of the general requirements for designs, installations, estimating and fittings. Credit 20(2-18).

422. Advanced Sheet Metal Work

Development of moldings, face miters, return miters, conductor heads, metal clad work, the theory and construction of a flat look standing seam and batten seam roofing guttering. Credit 20(2-18).

423. Advanced Sheet Metal Work

Practical design and shortened methods for laying out and fabricating ducts and fittings used in air conditioning, heating and ventilating, industrial sheet metal and blowpipe work. Credit 20(2-18).

SHOE REPAIRING AND LEATHER WORK**Training Objectives**

To give the student a practical knowledge of the subject matter as well as the necessary training in the related subjects to permit both the operation and maintenance of a shoe repairing and leather work shop, and as skilled workers in the trade.

Length of the Course

Two years of nine months each.

Time in Shop

A minimum of 20 hours per week for 36 weeks each year.

CURRICULUM

Shoe Repair 411, 412, 413, 421, 422, 423	60 hrs.
Math. 435, 436	6 hrs.
Eng. 211, 212, 213	15 hrs.
M. Sc. and Phy. Ed.	6 hrs.
B. Adm.	10 hrs.

Suggested Electives

B. A. 337, 346, 351, 332, 333, 335.

Ec. 231, 234.

Art 317, 318.

M. Shop 328, 329.

Elec. Wiring I. A. 326.

Sec. Sc. 317, 318.

COURSES**411. Threads and Hand Tools**

The study of threads, breaking threads, making waxed ends and twisting bristles on ends. Making various stitches used in hand sewing. The names, care and use of hand tools, sharpening knives and other hand tools. Credit 10(4-16).

412. Construction

The methods of fastening the parts of shoes together. The construction of shoes is then studied to enable one to make the proper repairs. Tempering and preparing leather for soles. Cutting off old soles, skiving shanks and preparing shoes for half soles and heels. Credit 10(4-16).

413. Processing

Inks, waxes, cement and nails are studied. Cutting sole leather to save. Fitting soles and heels for nailing. Putting lifts on wood heels. Inking, burnishing and finishing shoes on power machines. The care, operation and use of the patching machine is studied. Special attention is given to rip sewing and neat upper patching. Credit 10(4-16).

421. Bench Work

All students having satisfactorily completed their first-year course in shoe-repairing will begin their second-year course in shoe-repairing with a brief review of the first year's work. Fitting half soles and heels on men's welted shoes. Putting top lifts and half soles on women's welted shoes. Putting new bottoms on men's and women's shoes. Care and use of the buffer and burnishing wheels of finishing machines. Sewing of welts, cutting of inner soles and attaching wood heels. Credit 10(4-16).

422. Machine Operation

Attaching wood heels on women's shoes. Study and operation of the sole cementing process. Care and operation of the edge trimmer and setter. Sharpening edge cutters. Manipulation and care of the power stitcher. Stitching soles on curved needle stitchers, operating auto soler and the mechanics of shoe machines. Credit 10(4-16).

423. Finishing and Shop Management

Problems pertaining to highclass repair work. Changing suede shoes to glazed finish. Dyeing shoes pastel shades and the reglazed process of changing colors. Problems and methods of buying materials. The operation and business methods of the modern commercial shop. Credit 10(4-16).

TAILORING

Objectives

To effectively provide training in the various activities relating to the tailoring field. These areas are busheling, repairs, garment construction, and clothing design.

To develop through various methods, skilled craftsmen who may gainfully engage in any phase of the tailoring craft.

To maintain high standards of efficiency in training so that graduates of this course may qualify as shop owners, operators, or skilled mechanics in the field.

Length of Course

Three terms of nine months each or 27 consecutive months.

Amount of Time in the Shop

A minimum of 20 hours per week for 36 weeks each year is required.

CURRICULUM

Tailoring 411, 412, 413, 421, 422, 423, 431, 432, 433	90 hrs.
Math. 435, 436 or 311, 312	6 hrs.
English 211, 212	10 hrs.
Mil. Sc.	12 hrs.
Business Administration 335 or 351	5 hrs.
Art 311, 312	6 hrs.
Dry Cleaning 311, 312	6 hrs.
Sociology 231	5 hrs.
Physical Education	3 hrs.

Suggested Electives

- Ec. 231
- Eng. 224
- Sec. Sc. 317, 318

COURSES

First Year

411. Use and Care of Tools and Machinery. The Basic Hand Stitches

Proper method of using and caring for tools. Needles and thimble exercises to develop hand sewing skills. Practice in making the hand stitches. Machine operation to develop skill in stitching. Credit 10(4-16).

412. Pocket Making

The location and dimensions of the different types of trouser pockets. Practice pocket making: side, hip (welt and piped), watch, and flap pockets. A study of various woolen fabrics and trimmings used by tailors. Credit 10(4-16).

413. Trouser Making

Assembling the regular cut trousers. Introduction to trouser drafting. Study of the use and care of the tailoring machines. Credit 10(4-16).

Second Year**421. Review and Principles in Trouser Making**

A study of the different types of trousers. Primary alterations and repairs on trousers. Trouser drafting, fitting and skirt making. Use and maintenance of special machines as follows, nomenclature, oiling, regulating machine for different types of materials, preparation for stitching, and actual operation. Credit 10(4-16).

422. Busheling and Repairs

This entire quarter is to be spent in all types busheling and repairs. Among the repairs to be featured are: visible and invisible patching, recuffing, altering trouser waist and length, and many other types of repairs. A study of various types and sizes of buttons and where to use them. Shop management, job estimates in costs, time, and labor. Credit 10(4-16).

423. Shop Management and Cost Estimation Continued**Vest Construction**

Practice in making vests, waistcoats, and jackets both lined and unlined. A study of tailoring trimmings and stock-room arrangement. Vest drafting and fitting. Credit 10(4-16).

Third Year**431. Introduction to Coat Making**

Practice in all types of pockets usually found in sack coats and over-coats. Explanation of materials and techniques not previously used. A study of the sequential steps, styles, and trimmings used in coat making. Credit 10(4-16).

432. Coat Drafting and Suit Layout Techniques

A study of the various techniques which may be employed in suit layouts, marking, and cutting both three-piece and four-piece models. The last six weeks of this quarter will be spent on individual projects. The project will consist of drafting, cutting, trimming, and making a complete three-piece suit. The instructor will serve only in an advisory capacity during these projects. Credit 10(4-16).

433. Coat Making Continued

A study of all types of coats such as two button sacks, three button sacks, both single-breasted and double-breasted models. In addition, over-coats, topcoats, toppers and ladies' coats will also be studied. The last portion of this quarter will be utilized in advanced busheling such as shortening collars, remodeling, relining sleeves and coats and other similar operations. Reviews, critiques, and examinations will complete this phase of the work. Credit 10(4-16).

WELDING**Training Objectives**

This is a carefully organized course designed to prepare young men and women to become skilled Electric Arc Welders. The practical side of the course has been so emphasized that upon completion of the trade, students will be qualified to become owners or managers in Electric Arc Welding business as well as skilled mechanics in industry.

Length of Course

Twelve months. The time, however, will depend upon the student's experience and ability to pass standard tests.

Amount of Time in Shops

Twenty hours per week for forty-eight weeks.

CURRICULUM

Welding 411, 412, 413, 421	40 hrs.
English 211, 212	10 hrs.
Math. 435, 436 or 311, 312	6 hrs.
Electric Wiring 326	2 hrs.
Machine Shop 311-312	6 hrs.
Electives	4 hrs.
Suggested Electives: Art 311, B. A. 351.	

COURSES**411. Welding**

Electric arc welding. Care and operation of welding machines. A study of various welding rods and their uses. Current ratings for different kinds of welding. Practice in running beads and preparing work for welding. Credit 10(4-16).

412. Welding

Horizontal and vertical joints. Practice in laying continuous beads with different types of rods. Practice in welding butt and lap joints. Credit 10(4-16).

413. Welding

Vertical and Overhead joints. Practice in laying vertical and overhead beads. Intensive practice in selection of right type of rod for material use. Practice to prepare students to pass the American Welders Society Guide Bend Test. Credit 10(4-16).

421. Welding

Oxy-Acetylene welding practice on various joints in all positions, Care and adjusting of equipment. Cutting and brazing on light and heavy work. Welding and brazing of different types of metals. Practicing Butt Joints in all Positions and Testing. Credit 10(4-16).

RELATED TECHNICAL COURSES**411. Applied Drawing**

Instruction in the basic principles of mechanical drawing. Emphasis is placed upon the development of skills in using the drafting instruments and materials. Credit 3(0-6).

412. Applied Drawing

This instruction includes sectional views, pictorial drawing, auxiliary views, and drafting procedures. Prerequisite: 411. Credit 3(0-6).

413. Applied Drawing

Instruction in the principles of drafting as applied to the respective fields and minor layouts, also drawings and symbols for building construction as required of a student in the building trades. Prerequisite: 412. Credit 3(0-6).

435. Applied Math.

This course consists of application of mathematics to practical problems that may arise in the field and shop. It helps the students to apply their mathematics to everyday problems. Credit 3(3-0).

436. Applied Math.

Continuation of 435 with emphasis placed on problems in respective fields. Prerequisite: 435. Credit 3(3-0).

DRIVER EDUCATION**311. Driver Education**

This course is designed to teach traffic safety and automobile operations to beginning drivers. Common practices of safe driving, the essential knowledge of automobile operations and directed driving will be practiced in this course. Credit 3(2-3).

312. Driver Education

This course is designed to give students who have state driver's license the necessary training and practice to become professional driver teachers. Credit 3(2-3).

ELECTIVE INDUSTRIAL EDUCATION COURSES

These courses are designed for those students pursuing the regular college courses, and yet desiring some training in vocational fields. The students are given thorough drilling and are required to attain a knowledge of the subject matter. The courses are offered on the college level and regular college credit is allowed.

311. Auto Mechanics

Construction and operation of power systems. Fuel and cooling systems. Lubrication, washing and polishing. Repairs of tires. Credit 3(0-6).

312. Auto Mechanics

Study of ignition system, wiring and lighting system, batteries and their care, starter and generators. Credit 3(0-6).

313. Auto Mechanics

Minor repairs to safety devices. Brake adjustments. Credit 3(0-6).

311. Cabinet Making

Care and use of hand tools, wood turning, pattern making, or work to suit individual interest. Credit 3(0-6).

312. Cabinet Making

Care and use of power tools. Built-in cabinet. Small projects as desk, bookcases or useful projects for the home. Credit 3(0-6).

313. Cabinet Making

Inside trim. Varieties and characteristics of timber used in projects. Applying hardware, application of stain, varnish, shellac and enamel. Credit 3(0-6).

314. Cabinet Making

General building and repair work in furniture and cabinet construction. Prerequisite: I. A. 323. Credit 3(0-6).

311. Carpentry

Study and use of hand tools. Types of joints used in construction. General framing and bracing. Credit 3(0-6).

312. Carpentry

Blueprint reading and estimating of qualities. General construction of small projects of roof covering. Credit 3(0-6).

313. Carpentry

Stair building. General roof construction. Flooring. Experience on practical building. Credit 3(0-6).

314. Carpentry

General building and repair work in carpentry. Prerequisite: I. A. 323 or the equivalent. Credit 3(0-6).

311. Dry Cleaning

A study of steps necessary to complete a cleaning job. Methods of marking and assembling clothes. Some cleaning room practice. Credit 3(0-6).

312. Dry Cleaning

A study of finishing room tactics. Actually finishing silk and wool garments. Credit 3(0-6).

313. Dry Cleaning

General theory on dry cleaning operations. Plant Management. Credit 3(0-6).

314. Dry Cleaning

(Hat Blocking). Methods of cleaning and blocking ladies' and men's hats. Credit 3(0-6).

311. Electric Wiring

This course covers the fundamental principles of two and three wire circuits for light and power. Credit 3(0-6).

312. Electric Wiring

Study of and use of electrical wiring material. Credit 3(0-6).

313. Electric Wiring

Study of the electrical code. Credit 3(0-6).

311. Laundry Management

Assorting, classifying and loading of washers and extractors. Theory and practice. Credit 3(0-6).

312. Laundry Management

Receiving, marking and inspection of garments. Credit 3(0-6).

313. Laundry Management

Finishing, hand and machine care and maintenance of equipment. Credit 3(0-6).

311. Machine Shop Practice

A general introduction to machine shop methods. A study of small precision tools, lathes, shapers and drill presses. A study of the different types of steels and other metals used in machine shop. Construction of small projects. Credit 3(0-6).

312. Machine Shop Practice

A study and use of milling machines, turret lathes, grinders, and special machines. Construction of small projects requiring the use of each. Prerequisite: Machine Shop 311. Credit 3(0-6).

313. Machine Shop Practice

Continuation of machine shop 312. The construction of some project requiring the use of all machines in the shop. Prerequisite: Machine shop 311 and 312. Credit 3(0-6).

311. Masonry

Types of brick and their use in construction. Mortar mixing, thickness of joints, tools and practice work. Credit 3(0-6).

312. Masonry

Study of mortar, bonds, joints, pointing up. Practice work. Credit 3(0-6).

313. Masonry

Estimating, arches, lintels, chimneys and fireplaces. Practical jobs. Credit 3(0-6).

311. Painting and Decorating

A course designed to give a technical knowledge of colors and their uses. Mixing and matching colors, color psychology, color schemes and color harmony will be included in this course. Credit 3(0-6).

312. Painting and Decorating

A course designed to give the student a knowledge of general painting done around a home. A study will be made of the types of materials and paints used as well as coating small areas and articles found around the home. Credit 3(0-6).

313. Painting and Decorating

A study of interior finishes and their uses. The course includes a study of wall papers, fabrics, veneers, wall-tex, canvas, muslins and other wall coverings. Credit 3(0-6).

311. Photography

Small camera operation and roll film development. This course will enable the beginner to understand the operation and techniques used in making good pictures with small cameras. Types of film used in small cameras and their development. Credit 3(0-6).

312. Photography

Contact and Projection Printing. Students completing photography 311 will be given training in contact and projection printing and various finishing methods. Credit 3(0-6).

313. Photography

Composition with the small camera. Course is designed to train the beginner how to make good photographs both indoors and outdoors with natural and artificial lighting. Common errors and means of correcting them. Credit 3(0-6).

311. Plumbing

Care and use of tools: History of plumbing: Duties and responsibilities of a plumber. Cutting, threading, reaming, and simple fittings. Study of plumbing material. Credit 3(0-6).

312. Plumbing

Drainage and vent pipe installation: Drainage pipe arrangements. Supports and connections between pipes. Sewage disposal. Prerequisite: Plumbing 411. Credit 3(0-6).

313. Plumbing

Installation of traps and branch connections. Minor repairs. Pre-requisite: Plumbing 412. Credit 3(0-6).

311. Radio

This course consists of Ohm's and Kirchoff's Laws, study of radio symbols and schematic diagrams, voltmeters, ohmmeters, current and voltage measurements, radio principles, continuity checks, and fundamental shop techniques. Credit 3(0-6).

312. Radio

This is a continuation of 311 with emphasis on the function of capacitors and inductors in A.C. and D.C. circuits, diagram studies of the superheterodyne receiver. Credit 3(0-6).

313. Radio

Vacuum tube characteristics. Piezo-electric effect, phonograph pickups and amplifiers, vibrator power supplies, and servicing of automobile receivers. Credit 3(0-6).

311. Sheet Metal

A study of the use and care of tools and machines; shop projects with emphasis placed on work with hand tools; a study of the history and development of metals and present day uses. Credit 3(0-6).

312. Sheet Metal

Emphasis will be placed on general sheet metal including construction methods, bumping and raising metals. Drafting of individual projects will be stressed. Credit 3(0-6).

311. Shoe Repairing

The study of threads, making waxed ends and twisting bristles on ends. Stitches used in hand sewing. Care and use of hand tools for leather work. Credit 3(0-6).

312. Shoe Repairing

Construction. Methods of fastening parts of shoes together. Tempering and preparing leather for soles. Preparing shoes for half soles and heels. Ink dyes, cement and nails are studied. Bench work. Credit 3(0-6).

313. Shoe Repairing

Machine operation. Care and use of power stitcher. Cement process. Sewing of welts and cutting. Curved and straight needle stitchers. Finishing. Changing of color. Credit 3(0-6).

314. Shoe Repairing

Leather Craft. History of leather craft. Types of leather, tools and their uses. Lacings, slitting, tooling, stamping, dyeing, pattern cutting and the use of cement. Making of key cases, coin purses, bill folds and hand bags. Credit 3(0-6).

311. Tailoring

A study of the use of simple sewing equipment. Practice in simple hand stitches such as felling, darning, back stitching and others which may be utilized in doing simple repairs. Credit 3(0-6).

312. Handstitches Continued

A study of materials, their characteristics, differences, and similarities. A study of the various masculine garments and their construction. A survey of formal wear, types, seasonal use, color, dynamics, and combinations. Credit 3(0-6).

313. Tailoring

A study of style trends, machine maintenance and operation, practice sewing, and simple repairs. A study of buttons and threads. Credit 3(0-6).

311. Upholstering

Instruction is given in the care and use of upholstery tools, kinds of upholstery supplies and wood finishes. Projects are assigned in the construction of pads and edge rolls and cutting plans for economical cutting and yardage estimates. Credit 3(0-6).

312. Upholstering

This course deals with webbing, springs and spring edges. Practical projects are assigned in methods of fastening, placing and typing of springs and making spring edges. Credit 3(0-6).

311. Welding

Electric Arc Welding. The purpose of this course is to give students a knowledge and understanding of the welding process and its possibilities. A knowledge of the limitation of the process, of the apparatus used, of the common metals, their composition, their properties and methods of identification. Practice work in various types of flat beads and welds. Credit 3(0-6).

312. Welding

Continuation of 311 with practice in more difficult welds in flat and horizontal position. Credit 3(0-6).

313. Welding

Electric Arc Welding. A study of the different types of metals and welding rods to be used with steel, cast iron, malleable iron and more common metal. Skill in handling the welding machine as applied to practical jobs. Practice in Vertical and Overhead Welds. Oxy-Acetylene Gas Welding and Resistance Welding. Credit 3(0-6).

PRIZES AND AWARDS, 1953

1. The Spaulding Medal Award for Excellence in the School of Agriculture.
Winner—Julian A. Wilkins, Spring Hope, North Carolina.
2. The Merrick Medal Award for All-Round Excellence in the School of Engineering.
Winner—Charles Lett, 65 Fonda Avenue, Battle Creek, Michigan.
3. The Charles L. Cooper Award for Excellence in Industrial Arts.
Winner—David Thomas James, Jr., Sneads Ferry, North Carolina.
4. The Saslow's, Inc., Medal for the Best Record in the School of Education and Science.
Winner—Margaret Trisvan, Route 1, Box 40, Jarrett, Virginia.
5. The Saslow's, Inc., Medal for the Best Record in the Field of Social Sciences.
Winner—James Robert McCoy, 307 Briggs Street, Laurinburg, North Carolina.
6. The Susie B. Dudley Scholarship of \$100.00 presented by Mrs. I. J. Spaulding, Realtor, to a worthy student in the Graduate School, in memory of Mrs. Susie B. Dudley.
7. The William H. Foushee Memorial Scholarship Cup Award to the member of the Junior Class with the Highest Scholastic Average presented by Dr. J. M. McGee of Greensboro.
Winner—Lucille Piggott, 1007 Lindsay Street, Greensboro, North Carolina.
8. The Gate City Chapter, Alumni Association Award to that member of the Graduating Class voted by the Administrative Council as having rendered the Most Distinctive Service in interpreting the ideals of the College to the community.
Winner—Velma Speight Kennedy, Snow Hill, North Carolina.
9. The Philadelphia Chapter, Alumni Association Gold Medal Award to the Best All-Round Athlete in the Graduating Class.
Winner—Arthur Statum, 24 Mechanic Street, Bethlehem, Pennsylvania.
10. The "Register" Award for two years of Meritorious Service on the Staff of "The Register," campus newspaper.
Winners—James E. Bridgette, 517 Washington Street, Williamston, North Carolina; Sylvia E. Coleman, 22217 N. 21 Street, Philadelphia, Pennsylvania; Stanley M. Cook, 625 Erie Avenue, Niagara Falls, New York; Charles Gay, Post Office Box 145, Spring Hope, North Carolina; Lillie I. Jones, Route 1, Goldston, North Carolina; Mary V. Jones, 508 McKinley Avenue, Greenville, North Carolina; Lannie V. McArthur, Cromwell, Connecticut; Hanford Stafford, 512 N. 6th Street, Wilmington, North Carolina; Catherine B. Stroud, 505 Benbow Road, Greensboro, North Carolina; Edith Shirley Taylor, Route 2, Box 358, Tremont, North Carolina.

11. The Rand-Hawkins-McRae Debating Trophy presented by Messrs. J. M. Rand, J. A. Hawkins and S. D. McRae, graduates of the College, to the member of the graduating class for outstanding performance in four years of Varsity Debating.
Winner—James Marrow, 832 Gay Street, Rocky Mount, North Carolina.
12. The Debaters Certificate of Merit awarded to members of the graduating class who have rendered four years of service with the Kappa Phi Kappa Debating Society of the College.
Winners—Edith Shirley Taylor, Route 2, Box 358, Tremont, North Carolina; James Marrow, 832 Gay Street, Rocky Mount, North Carolina.
13. The Kappa Phi Kappa Debating Trophy to the graduating senior who was the most Cooperative and Dependable member of the Debating Society.
Winner—James Marrow, 832 Gay Street, Rocky Mount, North Carolina.
14. The Gold Key Award for Four Years of Meritorious Service in the A. and T. College Choir.
Winners—Gwendolyn M. Holt, 1116 East Market Street, Greensboro, North Carolina; Joel Norwood, Route 2, Box 70, Oxford, North Carolina; Gwendolyn E. Pullen, 1833 Second Street, Lynchburg, Virginia.
15. The Silver Key Award for Three Years of Meritorious Service in the A. and T. College Choir.
Winners—Ramona C. Brame, Route 5, Box 241, Henderson, North Carolina; Charles W. Jackson, 2539 N. 19th Street, Philadelphia, Pennsylvania; Gwendolyn V. Judge, 1515 Highland Avenue, Tampa, Florida; Carey Lassiter, 310 S. East Street, Raleigh, North Carolina; Raymond A. McDonald; Route 3, Box 325, Norfolk, Virginia; Richard E. Moore, 1016 Market Street, Farrell, Pennsylvania; Esther Peterson, Dover, North Carolina; Alice Russell, Route 5, Box 308, Henderson, North Carolina.
16. The Band Awards for Four Years of Meritorious Service in the A. and T. College Band.
Winners—Norman Abrams, 305 Winston Street, Thomasville, North Carolina; George Baldwin, Post Office Box 34, Norman, North Carolina; John W. Drake, Jr., Route 1, Box 14, Lumberton, North Carolina; James Evans, Williamston, North Carolina; Dorothy Godwin, 2505 Chapel Street, Norfolk, Virginia; Fannie Greenlee, 1712 Sherwood Street, Greensboro, North Carolina; Leroy Hill, 829 Garvis Street, Rocky Mount, North Carolina; William H. McBride, 1716 Beech Street, Greensboro, North Carolina; Julian Plummer, 2930 Lansing Avenue, Portsmouth, Virginia; Robert Sherrod, 1103 Dew Street, Durham, North Carolina; William Wright, Richmond, Virginia.

17. The Alpha Nu Chapter, Kappa Alpha Psi Fraternity Scholarship Cup Award presented to the College Sophomore with the Highest Cumulative Scholastic Average.
Winner—Bobby Liley, Greenville, North Carolina.
18. The Brotherhood Award of \$50.00 presented by Mr. Ralph Johns of Greensboro, North Carolina, to the student who has done most to promote brotherhood.
Winner—Margaret Helen Davis, Route 4, Box 104, Goldsboro, North Carolina.
19. The Intercollegiate Dramatic Association Awards for Meritorious Service with the Richard B. Harrison Players.
Winners—Mildred Louise Jackson, Box 4, Greenfield, Virginia; Mildred Ross McCall, Route 6, Box 274, Salisbury, North Carolina; Frances Andrews Shipman, 825 East Salisbury Street, Asheboro, North Carolina; William B. McIver, Post Office Box 331, Spring Lake, North Carolina; Aldon L. Carson, P. O. Box 155, Catawba, North Carolina; Richard L. Killens, Route 1, Box 7, Fairmont, North Carolina; Charles R. Pittman, 133 Cottage Street, Fairmont, North Carolina; Thelma Evora Hart, 307 N. Dudley Street, Greensboro, North Carolina; Henry E. Frye, Ellerbe, North Carolina.
20. The Fellowship Council Awards for Four Years of Meritorious Service in Religious Activities on the Campus.
Winners—Ella G. Arrington, Cary, North Carolina; Willie Ballard, 729 Ashley Avenue, Suffolk, Virginia; Evander L. Cherry, 306 W. McKinley Street, Ayden, North Carolina; Douglas Cromartie, 408 Holt Williamson Street, Fayetteville, North Carolina; Henry E. Frye, Ellerbe, North Carolina; Mildred L. Jackson, Box 4, Greenfield, Virginia; Mary V. Jones, 508 McKinley Avenue, Greenville, North Carolina; Rufus G. Kelly, Morven, North Carolina; McKinley Mayes, Route 4, Box 84, Oxford, North Carolina; Lannie V. McArthur, Cromwell, Connecticut; Doris C. McLean, Route 1, Lumberton, North Carolina; Mildred Mellette, Route 1, Box 6, Alachua, Florida; Mildred L. Ross, Route 6, Box 274, Salisbury, North Carolina; Frances H. Shipman, 825 East Salisbury Street, Asheboro, North Carolina; Velma Ruth Speight, Snow Hill, North Carolina; Louise C. Stafford, 512 N. 6th Street, Wilmington, North Carolina; Cleophas Williams, Route 1, Box 1-A, Claremont, North Carolina.
21. Honorable Mention for Rendition of Distinguished Service in Religious Activities during One to Three Years.
Mildred Clement, Route 2, Belton, South Carolina; Effie M. Flowers, 506 Miller Street, Goldsboro, North Carolina; Dorothy V. Franklin, Route 2, Box 416, Lynchburg, Virginia; Sarah Gladden, 228 Reed Street, High Point, North Carolina; Clara Johnson, Route 1, Box 350, Greensboro, North Carolina; Almena J. Kithcart, Post Office Box 369, Dallas, North Carolina; Mildred Taylor, 308 Sunset Drive, Chapel Hill, North Carolina; Willena Mitchener, Route 1,

Box 120, Smithfield, North Carolina; Christine Robinson, Route 1, Box 67, Macon, North Carolina; Geneva Smith, 410 Patton Avenue N. W., Roanoke, Virginia.

22. The Beta Iota Omega Chapter, Alpha Kappa Alpha Sorority, Scholarship Award of \$200.00 presented to:
Betty L. Lewis, General Delivery, Elizabethtown, North Carolina.
23. The Alpha Phi Chapter, Alpha Kappa Alpha Sorority, Scholarship Award of \$50.00 presented to:
Rebecca Henry Judge, Route 2, Box 6, Rose Hill, North Carolina.
24. The Beta Nu Chapter, Zeta Phi Beta Sorority, Inc., Scholarship Awards of \$50.00 each to:
Florine Irvin, 1930 Perkins Street, Greensboro, North Carolina;
Barbara Williamson, 745 Main Street, Danville, Virginia.
25. The Pan-Hellenic Council Scholarship Award of \$50.00 to the student below senior classification with the best record in Scholarship and Deportment.
Winner: Ruby M. Williamson, 745 Main Street, Danville, Virginia.

GRADUATING SENIORS HOLDING MEMBERSHIP IN SCHOLASTIC AND SCIENTIFIC HONOR SOCIETIES

ALPHA KAPPA MU HONOR SOCIETY

Norris F. Dendy	Dorothy Anna Miller
Willie Thomas Fisher	Doctor Steven Morrisey
Effie M. Flowers	John William Mitchell
Henry E. Frye	Carey Lassiter
Mary Evelyn Griffin	Velma Ruth Speight
Cecil Holloway	Gloria S. Swann
Mary Virginia Jones	William Charles Taylor
David Henry McElveen	Margaret M. Trisvan

BETA KAPPA CHI SCIENTIFIC SOCIETY

Calvin Boyd Benton	John William Mitchell
Norris F. Dendy	Doctor Steven Morrisey
Henry E. Frye	Gloria Swanson Swann
John Horton	William Charles Taylor
Burnie Legette	Otis Edward Tillman
David Henry McElveen	Oliver F. Wallace

SIGMA RHO SIGMA HONOR SOCIETY

James E. Bridgett, Jr.	Eva Elsie Jones
Edna Ruth David	Lillie Imogene Jones
Rosa Mae Gay	Catherine Beatrice Stroud
Helen Louise Haith	Ruby Gwendolyn Swinson
Clara Lorraine Johnson	Edith Shirley Taylor

Alexander Watson

TRADE CERTIFICATES

Auto Mechanics—Beverly, Stanley; Chaney, Frank H.; Copeland, Theodore; Dunn, Ronald Augusta; Huntley, Emanuel; Palmer, Sylvester; Peace, Richard Cromwell; Pinnix, Charlie Solomon; Simmons, Ralph; Taylor, Donnie; Watts, Ronald Smith.

Carpentry—Morgan, Charles; Payne, George M.

Dressmaking—Bethea, Bessie Lee; Ryan, Mary Esther; Watkins, Ida Ruth.

Dry Cleaning—Beard, Henry D.; Walls, Willie G.; Wright, William H.

Masonry—Dunson, Edward D.; Parker, Lloyd G.; Sewell, David, Jr.; Thompson, Leroy.

Plumbing—Michaux, Howard Donald.

Radio Servicing—Wilson, Thornton.

Secretarial Science—Bryant, Elizabeth B.

Shoe Repairing—Beard, Henry D.; Cropps, John.

Tailoring—Jackson, Harry Lorenzo; Bigelow, John Oscar; Edwards, Alice Ruth; Martin, Reva; Norman, Timothy; Sanders, Cora Lee; Starks, Prince Hosanna; Webb, Hoover; Whitehurst, Nathan McKinley.

**CANDIDATES FOR COMMISSIONS AS SECOND LIEUTENANTS
IN THE UNITED STATES ARMY (INFANTRY)**

Anderson, Charles M.	McCullough, Connie I.
Anderson, William E.	McIver, William B.
Bailey, Samuel L., III	McLean, Willard J.
*Bynum, George W.	Mims, Haywood
Carson, Aldon L.	*Murphy, Charles W.
Chisom, Willie F.	Norwood, Joel
Crawford, Billie	Owens, Wallace M.
*Dailey, Donas H.	Plummer, Julian S.
Davis, Willie L.	Powell, Langston B.
Degraffenreidt, Joseph W.	Powell, Robert E.
†*Dendy, Norris F., Jr.	Rodwell, Charlie T.
DeVaughn, Abram	Rogers, James L.
Drake, John W.	Ross, Ernest
Edwards, James M.	Sherrod, Robert G.
Eubanks, Anthony W.	Simmons, James W.
*Funderburke, George F.	Smith, Rodger E.
Gay, Charles H.	Statum, Arthur
Grey, Willie H.	Thompson, David L.
Harrell, Adam	Walker, John H.
*Hollingsworth, William D.	Walker, Levi
Hunter, Walter A.	*Wall, James K.
*Jones, George D.	†*Wilkins, Julian A.
Jones, Harold, Jr.	Wilson, Francis H.
King, Raymond S.	Wimberly, Morris N.
Long, Thurmond A.	Wooten, Rufus E.
Marrow, James E.	

*Distinguished Military Students.

†Distinguished Military Graduates.

**CANDIDATES FOR COMMISSIONS AS SECOND LIEUTENANTS
IN THE UNITED STATES AIR FORCE**

Benton, Calvin B.	*Legette, Burnie
*Bridgett, James E., Jr.	Legette, Samuel L.
†*Brown, Thomas E.	†*McElveen, David H.
Cromartie, Douglas	†*Mitchell, John W.
Dees, Charles D.	*Morrisey, Doctor S.
Duncan, Delbert B.	Rice, William H., Jr.
Frye, Henry E.	Robertson, Charlie A.
†*Jones, William W., II	Rogers, Price, Jr.
Killens, Richard L.	*Taylor, William C., Jr.

*Distinguished Military Students.

†Distinguished Military Graduates.

DEGREES CONFERRED JUNE 1, 1953**RANKING STUDENTS**

With Highest Honor.....	Thomas N. Allen
With Highest Honor.....	Effie Margaret M. Flowers
With Highest Honor.....	Norris Furman Dendy, Jr.
With Highest Honor.....	Henry E. Frye
With Highest Honor.....	Mary Evelyn Griffin
With Highest Honor.....	Mary Virginia Jones
With Highest Honor.....	Louis A. Lindsay
With Highest Honor.....	Dorothy Anna F. Miller
With Highest Honor.....	Frances H. Andrews Shipman
With Highest Honor.....	Gloria Swanson Swann
With Highest Honor.....	Margaret M. Trisvan
With High Honor....	Willie Thomas Fisher
With High Honor....	Cecil Earl Holloway
With High Honor....	Charles Lett
With High Honor....	Lillie Imogene Jones
With High Honor....	James Robert McCoy
With High Honor....	David Henry McElveen
With High Honor....	Doctor Steven Morrissey
With High Honor....	Russell V. Penn
With High Honor....	Velma Ruth Speight
With High Honor....	Catherin Beatrice Stroud
With High Honor....	Ruby Gwendolyn Swinson
With High Honor....	Vernell Watson
With High Honor....	Julian A. Wilkins
With Honor.....	Thomas Earl Brown
With Honor.....	Ellis M. Hall
With Honor.....	John William Mitchell
With Honor.....	Mae Collier Fuller
With Honor.....	Juanita Milton Jordan
With Honor.....	Lannie Virginia McArthur
With Honor.....	Melvin Charles Smith
With Honor.....	Arthur Southerland, Jr.
With Honor.....	David Thomas James, Jr.
With Honor.....	Robert E. Henderson
With Honor.....	James Edward Bridgett, Jr.
With Honor.....	Edna Ruth David
With Honor.....	Helen Louise Haith
With Honor.....	Vance Elbert Hall
With Honor.....	John Jasper Horton
With Honor.....	Mildred Louise Jackson
With Honor.....	Clara Lorraine Johnson
With Honor.....	Eva Elsie Jones

RANKING STUDENTS—(Continued)

With Honor.....	William Wilfred Jones II
With Honor.....	William Charles Taylor
With Honor.....	Otis Edward Tillman
With Honor.....	John Ward, Jr.

BACHELOR OF SCIENCE IN AGRICULTURE

William Edward Askew.....	Route 1, Box 71, Cofield, N. C.
Melbourne C. Bailey.....	Jamaica, B. W. I.
John Virgil Barner.....	Route 1, Lawndale, N. C.
Kelly Miller Blount.....	810 S. George Street, Farmville, N. C.
Allen R. Bowens.....	Brays Post Office, Essex County, Va.
Alonza Cassie Brown.....	Route 1, Box 162, Roanoke Rapids, N. C.
Thomas Earl Brown.....	Route 1, Box 7-8, Trenton, N. C.
James Wilbert Bryant.....	Route 1, Box 12, Council, N. C.
Aldon Louis Carson.....	Post Office Box 155, Catawba, N. C.
John Nathaniel Champion.....	Route 2, Box 95, Fuquay Springs, N. C.
Evander Leigh Cherry.....	306 W. McKinley Street, Ayden, N. C.
Alphus Bernard Cousins.....	149 Beech Street, Greensboro, N. C.
Douglas Cromartie.....	408 Holt Williamson Street, Fayetteville, N. C.
Charles Darwin Dees.....	Post Office Box 249, Chadbourn, N. C.
Clifton Calvin Farrar.....	Route 1, Box 139, Portsmouth, Va.
Samuel Belton Gaither.....	Box 41, Marshville, N. C.
Felton Irvin Grainger.....	Chadbourn, N. C.
Garland Green.....	Route 1, Box 83, Swanner, N. C.
Ellis M. Hall.....	Route 1, Box 219, Orrum, N. C.
John Frank Harding.....	605 Vance Street, Greenville, N. C.
Marshall Nathaniel Harris.....	Route 2, Box 95, Wilkesboro, N. C.
Milton Alphonso Harvey.....	Route 1, Box 36, Council, N. C.
Elbert Herbert Holmes.....	Route 3, Box 202, Ocala, Fla.
Alpheus Booker Howell.....	Route 2, Box 117, Cherryville, N. C.
Thomas Henry Hudgins.....	Route 2, Box 14, South Hill, Va.
William Bryant McIver.....	Post Office Box 331, Spring Lake, N. C.
Connie Idell McCullough.....	Route 1, Box 74, Ransomville, N. C.
Clinton McKoy.....	Post Office Box 386, Red Springs, N. C.
James Edgar Marrow.....	832 Gay Street, Rocky Mount, N. C.
McKinley Mayes.....	Route 1, Box 42, Oxford, N. C.
John William Mitchell.....	Post Office Box 53, Hallsboro, N. C.
Wallace M. Owens.....	Route 1, Box 43, Columbia, N. C.
John Elwood Pellam.....	Post Office Box 306, Rich Square, N. C.
Wilbur Glenwood Pierce.....	Route 3, Box 226, Ahoskie, N. C.
William Henry Rice, Jr.....	Route 3, Apex, N. C.
Lester Hargrove Richardson.....	Route 1, Box 164, Waxhaw, N. C.
Charlie Anthony Robertson.....	Route 2, Box 62-A, Raleigh, N. C.
Cicero A. Roland.....	306 Beech Street, Greensboro, N. C.

BACHELOR OF SCIENCE IN AGRICULTURE—(Continued)

Chester Stocks.....	Route 1, Box 93, Grifton, N. C.
John Henry Walker.....	Shelby, N. C.
Julian A. Wilkins.....	Route 2, Box 141, Spring Hope, N. C.
Cleophas Williams.....	Route 1, Box 1-A, Claremont, N. C.
Johnny Albert Williams.....	311 North 6th Street, Wilmington, N. C.
Jeremiah Wills.....	Route 1, Box 103, Littleton, N. C.

BACHELOR OF SCIENCE IN HOME ECONOMICS

Albunyer Lorine Arrington.....	Route 2, Box 254, Enfield, N. C.
Ella Gray Arrington.....	120 Johnson Street, Cary, N. C.
Emma Lillian Blackmon.....	Route 3, Box 84, Tarboro, N. C.
Ramona Carolyn Brame.....	Route 5, Box 241, Henderson, N. C.
Verna Estella Butler.....	Post Office Box 602, Roseboro, N. C.
Mildred Faye Coble.....	507 Woodlawn Street, Asheboro, N. C.
Maxine Conyers.....	Route 2, Box 71, Zebulon, N. C.
Ada Ernestine Cumber.....	110 Braxton Court, Williamsburg, Va.
Vera Otelia Griswell.....	Route 1, Box 116, Columbia, N. C.
Gloria Mae Jennings.....	Route 2, Box 240, South Boston, Va.
Gloria E. Jones.....	Route 1, Box 158, Whitsett, N. C.
Theresa Mae King.....	Route 1, Box 248, Spring Lake, N. C.
Rachel Manly.....	Route 3, Box 77, Ahoskie, N. C.
Lois Lucille Martin.....	Box 106 No. 2, Madison, N. C.
Lottie Lee Massenburg.....	Route 1, Box 2, Stony Creek, Va.
Earla Arleast McDonald.....	342 Vanstory Street, Fayetteville, N. C.
Christine Robinson.....	Route 1, Box 67, Macon, N. C.
Mary Esther Ryan.....	Route 1, Box 203, Windsor, N. C.
Flossie K. Sawyer.....	Route 2, Box 114, Edenton, N. C.
Geneva Smith.....	410 Patton Avenue N. W., Roanoke, Va.

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Thomas N. Allen.....	Route 1, Box 89, Fayetteville, N. C.
Bobby Lee Anderson.....	601 Monroe Street, Lynchburg, Va.
Kelly H. Bennett.....	Route 2, Box 502, Clinton, N. C.
Eugene Boyd.....	12 Kelsey Street, Wellsboro, Pa.
Eugene Copeland, Jr.....	105 Bostic Street, Bennettsville, S. C.
Robert Lee Eldridge.....	Summerfield, N. C.
Willie Thomas Fisher.....	907-A Elm Street, New Bern, N. C.
Cecil Earl Holloway.....	1303 Lindsay Street, Greensboro, N. C.
Haskell E. Hough.....	2317 Booker Avenue, Charlotte, N. C.
Roger McKee.....	1050 Armstrong Street, Greensboro, N. C.
Edgar Shepard.....	1402 Julian Street, Greensboro, N. C.
David Lee Thompkins.....	811 Gray Avenue, Winston-Salem, N. C.
Otis Bernarr Vines.....	602 Vance Street, Greenville, N. C.

BACHELOR OF SCIENCE IN COMMERCIAL EDUCATION

Willie Oranda Braswell.....	400 S. Road Street, Elizabeth City, N. C.
Laura Belle Brooks.....	Route 2, Box 112-A, Kernersville, N. C.
Annie Ruth Marable Brown.....	Post Office Box 113, Littleton, N. C.
Mildred Cornelius Clement.....	Route 2, Belton, S. C.
Sylvia Ella Coleman.....	2217 N. 21st Street, Philadelphia 32, Pa.
William Rudolph Davis.....	1410 Summitt Avenue, Portsmouth, Va.
Gladys Louise Dodd.....	318 Gilmer Avenue N. W., Roanoke 17, Va.
Ruby Beatrice Edwards.....	Route 5, Box 50-A, Henderson, N. C.
Effie Margaret M. Flowers.....	506 Miller Street, Goldsboro, N. C.
Mae Collier Fuller.....	731 Dunbar Court, Greensboro, N. C.
Susie Cornelius Gilliard.....	713 Bluford Court, Greensboro, N. C.
Hennie Mae Guyton.....	General Delivery, Hallsboro, N. C.
Corine McD. Hamilton.....	509 Gulley Street, Goldsboro, N. C.
E. Louise Harris.....	312 Patton Avenue, N. E., Roanoke, Va.
Marjorie Holmes.....	Box 65, Walstonburg, N. C.
Juanita Milton Jordan.....	Route 2, Box 420, Brown Summit, N. C.
Magalene Lee.....	422 Cole Street, Greensboro, N. C.
Geraldine Delores Legett.....	Route 3, Box 54, Marion, S. C.
Elizabeth Lennon.....	Route 2, Box 161, Chadbourn, N. C.
Shirley Thomas LeSueur.....	526 Rosenwald Street, Burlington, N. C.
Lannie Virginia McArthur.....	19 South Street, Cromwell, Conn.
Leacha Ray Moore.....	Star Route, Box 40, Harrellsville, N. C.
Ezra Julius Moore.....	1008 Leonard Street, High Point, N. C.
Shirley Morris.....	Route 3, Box 24, Franklin, Va.
Maxine Neal.....	Route 2, Box 254, Franklinton, N. C.
Mildred Helen Norman.....	77 Pine Grove Avenue, Asheville, N. C.
Cora Gwendolyn Page.....	Post Office Box 373, Lake View, S. C.
Dolorise Winnora Phillips.....	205 Powell Street, Greensboro, N. C.
Abbie Jacquelyn Short.....	8 Baker Street, Greenville, S. C.
Melvin Charles Smith.....	805 Bennett Street, Greensboro, N. C.
Anna D. Steele.....	General Delivery, Harmony, N. C.
Irene Long Stephens.....	301 Shenandoah Avenue N.W., Roanoke, Va.
Mattie L. Tarry.....	Route 5, Box 149, Henderson, N. C.
Ann R. Watts.....	446 Byrd Street, Greenwood, S. C.

BACHELOR OF SCIENCE IN ARCHITECTURAL ENGINEERING

Elmo C. Daugherty.....	335 14th Street, N. E., Washington, D. C.
Eugene White, Jr.....	2834 LaSalle Street, New Orleans, La.

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Samuel Lee Legette.....	Route 3, Box 132, Mullins, S. C.
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BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

James H. Glenn.....	419 High Street, Greensboro, N. C.
George Haywood Motley.....	447 Cole Street, Greensboro, N. C.
Arthur Southerland, Jr.....	601 Forker Street, Laurinburg, N. C.
Oliver F. Wallace.....	603 Leibert Street, Bethlehem, Pa.

BACHELOR OF SCIENCE IN FINE ARTS

James Stevens Beatty.....	Route 1, Box 157, Willard, N. C.
James E. Farrow.....	General Delivery, Pantego, N. C.
Lynell Isadore Staplefoote.....	910 Rich Avenue, Winston-Salem, N. C.
Rosa Lee Rhodesia Nichols.....	Post Office Box 710, Savannah, Ga.

BACHELOR OF SCIENCE IN INDUSTRIAL ARTS

Philip Daniel Boone.....	1724-H. Street N. E., Washington, D. C.
Lorenza Clemons.....	Post Office Box 776, Southport, N. C.
Tucker M. Harris, Jr.....	Route 3, Box E 88, Oxford, N. C.
David Thomas James, Jr.....	General Delivery, Sneads Ferry, N. C.
Simon Olden, Jr.....	2367 E. 15th Street, Brooklyn 29, N. Y.
Curtis Leroy Powell.....	1207 Dawson Street, Wilmington, N. C.
R. T. Saxon, Jr.....	419 East Washington Avenue, Kinston, N. C.
Rodger Lee Small, Jr.....	Route 4, Box 209, Windsor, N. C.
Harrison Smith.....	2601 E. Market Street, Apt. 2-E, Greensboro, N. C.

BACHELOR OF SCIENCE IN VOCATIONAL INDUSTRIAL EDUCATION

Richard F. Alexander, Jr.....	1200 Beatty's Ford Road, Charlotte, N. C.
James Clinton Goode.....	Post Office Box 27, Margarettsville, N. C.
Charles Hayward Hardy.....	909 Lindsay Street, Greensboro, N. C.
Robert E. Henderson.....	105 E. 9th Street, Tuscaloosa, Ala.
Charles Lett.....	65 Fonda Avenue, Battle Creek, Mich.
James Monroe McCalloum.....	1508 Fitch Street, Winston-Salem, N. C.
Winford Lee Morgan.....	611 Spring Street, Wilson, N. C.
Morris Wilson Randall.....	912 Douglas Street, Greensboro, N. C.
Thomas E. Sinclair, Jr.....	3910 Warwick Avenue, Newport News, Va.
John Daniel Slade.....	430 Church Street, Williamston, N. C.
James Hilton Smith, Jr.....	421 Pollock Street, Beaufort, N. C.
Larkin B. Smith, Jr.....	1923 Lutheran Street, Greensboro, N. C.
Willie Smith, Jr.....	915 Benbow Road, Greensboro, N. C.
Benjamin W. Steid.....	17-C Street, Apt. 4, Charleston, S. C.
Joseph Alfred Swain.....	Post Office Box 234, Southport, N. C.
James Edward Tate.....	408 North Pugh Street, Lexington, N. C.
Morris L. Todd.....	912 Palmer Street, Portsmouth, Va.
Leslie W. Trent.....	Box 192, Parksley, Va.
George Alphus Tyler.....	414 Pine Avenue, Newport News, Va.
Wilson Sentell Weaver.....	614 South Raeford Street, Selma, N. C.

BACHELOR OF SCIENCE

Mary Ann Abernathy.....	220 Horton Street, Lenoir, N. C.
Mary Lee Allen.....	416 High Street, Greensboro, N. C.
Willie Herbert Allen.....	308 North Street, High Point, N. C.
William Earnest Anderson.....	174 A. Street, Abingdon, Va.
Elmer Waynn Artis.....	Stautonsburg, N. C.
Eva Grace Atkinson.....	Route 2, Box 185-A, Dunn, N. C.
Emmett Lee Banks.....	Post Office Box 93, Chatham, Va.
Leon A. Barnett.....	2239 St. Albans Street, Philadelphia 46, Pa.
Jessie Benjamin.....	Route 1, Box 118, Jackson, N. C.
Calvin Boyd Benton.....	1110 Bay Street, Morehead City, N. C.
Joyce Kaye Blackmore.....	Box 112, Warsaw, N. C.
Billie Dorethe Bland.....	302 South Virginia Street, Goldsboro, N. C.
Howard Boney.....	Box 53, Wallace, N. C.
Nathaniel Boney.....	Route 3, Box 25, Rose Hill, N. C.
James Edward Bridgett, Jr....	517 Washington Street, Williamston, N. C.
Herbert H. Browder.....	412 North 4th Terrace, Birmingham, Ala.
Seymour C. Brown.....	Route 3, Box 548, New Bern, N. C.
Arthur E. Bullard.....	1154 Duke Street, Waycross, Ga.
Vernon McKinley Carson.....	1900 Pansy Street, Lynchburg, Va.
Willie Holt Collier.....	718 South Ashe Street, Greensboro, N. C.
Stanley M. Cook.....	625 Erie Avenue, Niagara Falls, N. Y.
Frada Mae Owens Cooke.....	1721 Main Street, South Boston, Va.
Edna Ruth David.....	815 Gorrell Street, Greensboro, N. C.
Artrice Elizabeth Davis.....	Post Office Box 78, Mt. Gilead, N. C.
Booker T. Davis.....	1418 E. 8th Street, Winston-Salem, N. C.
Robert Benson Dean, Jr.....	Post Office Box 518, Maxwell, Va.
Joseph W. Degrafferreidt, Jr.....	Box 128, Pittsboro, N. C.
Norris Furman Dendy, Jr.....	507 Centennial Street, Clinton, S. C.
Hassie L. Dillard.....	Box 140, Leaksville, N. C.
Queen Matoaka Dixon.....	Post Office Box 33, Enfield, N. G.
Sara Adelaide Dolphus.....	2210 Celia Street, Charlotte, N. C.
Delbert Benny Duncan.....	47 Lincoln Terrace, Cincinnati, Ohio
Marian Louise Dunn.....	119 W. Hillside Avenue, Durham, N.C.
Preston M. Fair, Jr.....	1404 Baxter Street, Charlotte, N. C.
Mary Lee Farrow.....	Route 2, Box 23, Kenansville, N. C.
Velma V. Farrow.....	Post Office Box 73, Pantego, N. C.
Nena Mae Faulcon.....	Box 311, Littleton, N. C.
Daisy E. Flood.....	177 Price Road, Leaksville, N. C.
Adele Carter Foard.....	1708 Kivett Drive, High Point, N. C.
Bobbie Jean Foster.....	823 Moore Street, Reidsville, N. C.
Dorothy Virginia Franklin.....	Route 2, Box 416, Lynchburg 6, Va.
Johnnie A. Freeman, Jr.....	Route 1, Box 147, Tarboro, N. C.
Henry E. Frye.....	Ellerbe, N. C.
Charles Howard Gay.....	Post Office Box 145, Spring Hope, N. C.
Rosa Mae Gay.....	Post Office Box 442, Laurinburg, N. C.
Jack H. Gibson.....	1269 Marcy Street, Akron, Ohio

BACHELOR OF SCIENCE—(Continued)

Sarah Belle Gladden.....	228 Reed Street, High Point, N. C.
Johnnie C. Goodlett.....	37 Forest Street, Greer, S. C.
Samuel Clifton Goodson, Jr.....	109 South Tarboro Street, Raleigh, N. C.
Winston Jerome Graham.....	610 Julian Street, Greensboro, N. C.
Mary Evelyn Griffin.....	Post Office Box 601, Tryon, N. C.
William Marquhn Griggs, Jr.....	1492 Chapel Street, Norfolk 4, Va.
Helen Louise Haith.....	Route 2, Box 49, Elon College, N. C.
Robert Hall.....	914 W. Rowan Street, Fayetteville, N. C.
Vance Elbert Hall.....	Post Office, Cofield, N. C.
Reva Mae Harper.....	529 Patton Avenue, N. W., Roanoke, Va.
Adam Harrell.....	Post Office Box 33, Faison, N. C.
Dorothy Bolding Harris.....	303 Regan Street, Greensboro, N. C.
Melvin Leon Harris.....	Box 663, Kimball, W. Va.
Thelma E. Hart.....	327 N. Dudley Street, Greensboro, N. C.
William Earl Hawkins.....	Post Office Box 483, Henderson, N. C.
Walter George Herrington.....	1102 Nunn Street, Waycross, Ga.
James O. Hester.....	215 Johnson Street, Roxboro, N. C.
Guy Holman, Jr.....	Post Office Box 182, Mocksville, N. C.
John Jasper Horton.....	1005 Bay Street, Morehead City, N. C.
Ernest Richard Howell.....	508 Booker Street, Goldsboro, N. C.
Willie Jean Howell.....	Route 2, Box 163, Taylorsville, N. C.
John H. Hunt.....	168 White Street, Danville, Va.
Olivia Huntley.....	926 Hackett Street, Greensboro, N. C.
Mildred Louise Jackson.....	Box 4, Greenfield, Va.
Clara Lorraine Johnson.....	Route 1, Box 350, Greensboro, N. C.
Eva Elsie Jones.....	Post Office Box 1114, Tryon, N. C.
Lillie Imogene Jones.....	214 Marshall Street, Greensboro, N. C.
Mary Virginia Jones.....	508 McKinley Avenue, Greenville, N. C.
William Wilfred Jones II.....	324 Holbrook Street, Danville, Va.
Mary Cornelia Joyce.....	1620 East 11th Street, Winston-Salem, N. C.
Eddie Joyner.....	112 Forsyth Street, Thomasville, N. C.
Amos Leroy Kelly.....	315 Gorrell Street, East Spencer, N. C.
Rufus Garson Kelly.....	Route 1, Box 111, Morven, N. C.
Clyde C. Kenion.....	225 Brewer Street, Asheboro, N. C.
Edna Marie Kennedy.....	506 Date Street, Fernandina Beach, Fla.
Richard L. Killens.....	Route 1, Box 7, Fairmont, N. C.
James Thirkield King.....	710 Sevier Street, Greensboro, N. C.
Carey Lassiter.....	310 S. East Street, Raleigh, N. C.
Bessie Lee Ledbetter.....	309 South Stewart Street, Rockingham, N. C.
Austin Roosevelt Lee.....	127 Depot Street, Roxboro, N. C.
Burnie Legette.....	815 Cameron Avenue, Winston-Salem, N. C.
Clarence Lewis.....	242 W. Whittington Street, Greensboro, N. C.
Louis A. Lindsay.....	Route 1, Box 155, Whitsett, N. C.
Josephine Little.....	706 Willard Street, Durham, N. C.
Inez Lockley.....	Route 1, Box 70, Apex, N. C.
Thomas Abram Mack, Jr.....	115 Avenue D, Darlington, S. C.

BACHELOR OF SCIENCE—(Continued)

Mary H. Malloy.....	McCain, N. C.
Juan Anes Mansanet.....	G. Z. E. 20, Puerto Nuevo, Puerto Rico
Nina Mae Lee Marsh.....	315 Saunders Street, Sanford, N. C.
Roman Hayes Massenberg.....	Route 2, Stony Creek, Va.
Melvin Franklin McCorkle.....	Route 5, Box 629, Kannapolis, N. C.
James Robert McCoy.....	307 Briggs Street, Laurinburg, N. C.
John Lee McDowell.....	Lutheran College, Greensboro, N. C.
David Henry McElveen.....	Route 1, Box 35, Pamplico, S. C.
Mary Farrior McKinney.....	33-47th Street, S. E., Washington, D. C.
Doris Costella McLean.....	Route 1, Lumberton, N. C.
Jimmie Winfield McLean.....	Route 2, Box 161, Lillington, N. C.
Willard James McLean.....	Route 1, Box 27, Erwin, N. C.
Cleo Tenant McLeod.....	213 Huffman Street, Greensboro, N. C.
Henry McMickens.....	1562 Franklin Street, Jacksonville, Fla.
Gwendolyn Ernestine McMillan.....	Bayboro, N. C.
Bennie Gerald McMorris.....	234 Flint Street, Asheville, N. C.
Marvin McQueen, Jr.....	8 West Worth Street, Raleigh, N. C.
Ruth Franks McRae.....	724 Frank Street, Asheboro, N. C.
Helburn Meadows.....	Post Office Box 88, Creswell, N. C.
Mildred Almira Melett.....	Route 1, Box 6, Alachua, Fla.
Dorothy Anna F. Miller.....	302 W. Sullivan Avenue, Gastonia, N. C.
Willena A. Mitchener.....	Route 1, Box 120, Smithfield, N. C.
Jacqueline E. Moffitt.....	611 Law Street, Greensboro, N. C.
Bleka Lindsay White Moore.....	25 Whitehall Street, Abbeville, S. C.
Alfred W. Morgan.....	45 Park Avenue, Manasquan, N. J.
Doctor Steven Morrisey.....	Route 1, Box 165, Turkey, N. C.
Madison E. Morrison.....	299 North View Street, Spartanburg, S. C.
Vivian Elizabeth Pasco.....	Tampa, Fla.
Mary Pendergraft.....	Post Office Box 622, Chapel Hill, N. C.
Russell V. Penn.....	1515 Sloan Street, Greensboro, N. C.
Larn Alice Perry.....	851 Camel Avenue, Winston-Salem, N. C.
Esther Peterson.....	Dover, N. C.
Mary Alice Pittman.....	1201 Highland Avenue, Rocky Mount, N. C.
Charles Robert Pittman.....	133 Cottage Street, Fairmont, N. C.
Rosa Mae Price.....	406½ N. Gilmer Street, Greensboro, N. C.
Robert Earl Powell.....	610 South Pollock Street, Selma, N. C.
Louis Reed.....	637 South Park Avenue, Warren, Ohio
Mozella Berthina Ritter.....	Route 1, Box 32, Carthage, N. C.
James E. Robinson, Jr.....	134 West 112 Street, New York, N. Y.
Haywood Price Rogers, Jr.....	Box 350, Fuquay Springs, N. C.
Frances H. Andrews Shipman.....	Post Office Box 33, Liberty, N. C.
Anne Laura Smith.....	230 W. Wall Street, Milledgeville, Ga.
Creed DeLaney Smith	1201 Broadway Avenue, Sea Side, Calif.
Linwood James Smith.....	Route 1, Box 44, Warrenton, N. C.
Reginald Kenneth Smith.....	Post Office Box 141, Alachua, Fla.
Robert Paul Smith.....	469 Wabash Avenue, Akron, Ohio

BACHELOR OF SCIENCE—(Continued)

Rodger Eugene Smith.....	203 W. Pine Street, Goldsboro, N. C.
Ira Snell.....	1240—2nd Street, Canton, Ohio
Velma Ruth Speight.....	Route 1, Box 75, Snow Hill, N. G.
Hanford Dozier Stafford.....	512 N. 6th Street, Wilmington, N. C.
Louise Colston Stafford.....	Post Office Box 851, Florence Villa, Fla.
Catherine Beatrice Stroud.....	505 Benbow Road, Greensboro, N. C.
Hattie Mae Summers.....	327 N. Dudley Street, Greensboro, N. C.
Gloria Swanson Swann.....	674 Davis Street, Danville, Va.
Ruby Gwendolyn Swinson.....	Route 4, Box 197, Goldsboro, N. C.
Edith Shirley Taylor.....	Route 2, Box 358, Tremont, N. C.
Mary Frances Taylor.....	Waverly, Va.
William Charles Taylor.....	818 Steel Street, Sanford, N. C.
Marvelene L. Tillman.....	421 N. Caldwell Street, Charlotte, N. C.
Otis Edward Tillman.....	Route 1, Box 300, Wadesboro, N. G.
Margaret M. Trisvan.....	Route 1, Box 40, Jarrett, Va.
Mary Elizabeth Wagstaff.....	Post Office Box 752, Burlington, N. C.
Constance Carol Walden.....	Route 1, Box 50, Halifax, N. C.
John Ward, Jr.....	Route 4, Box 31-C, Wilson, N. C.
LeRoy Thomas Washington, Jr.....	125 West Lincoln Street, Carlisle, Pa.
Haywood Lee Waters.....	Route 1, Box 41, Fremont, N. C.
Alexander Watson.....	810 Glendale Avenue, Durham, N. C.
Mary Patsy Watson.....	General Delivery, Graham, N. C.
Vernell Watson.....	808 Glendale Avenue, Durham, N. C.
Fleming T. Williamson, Jr.....	501 Martin Street, Greensboro, N. C.
DeWitt Willis.....	912 E. 2nd Street, Plainfield, N. J.
Alfred Daniel Wilson.....	712 Douglas Street, Greensboro, N. C.
Sterling Winn.....	717 10th Street, Canton, Ohio
Daisy Portee Withers.....	812 Fair View Street, High Point, N. C.
Nettye Vann Wooten.....	Route 1, Box 326, Bladenboro, N. C.
Roy W. Wright.....	947 Illinois Street, Detroit 7, Mich.
Dorothy C. York.....	2306 23rd Avenue, Tampa, Fla.

MASTER OF SCIENCE IN AGRICULTURAL EDUCATION

William A. Goldsborough, B.S., Hampton Institute.....	1936
Ezell Alexander Blair, B.S., A. and T. College.....	1941
Nathan Edward Brown, B.S., A. and T. College.....	1941
James Jonathan Davis, B.S., A. and T. College.....	1951
Earl Gordon, B.S., A. and T. College.....	1949
Eddie Hargrove, B.S., Hampton Institute.....	1950
Edward Sylvester Houston, B.S., A. and T. College.....	1934
Robert L. Jones, B.S., A. and T. College.....	1950
Dennis E. Parks, Jr., B.S., A. and T. College.....	1951
Edward Powell, B.S., A. and T. College.....	1948
Melvin Lloyd Wall, B.S., A. and T. College.....	1938

MASTER OF SCIENCE IN RURAL EDUCATION

Margaret Anne Bizzell, B.S., A. and T. College.....	1941
Earl Brown, A.B., Lincoln University.....	1932
Rufus Lee Carmical, B. S., The Agricultural, Mechanical and Normal College of Arkansas.....	1937
Vernell James Caveness, B.S., A. and T. College.....	1935
Elizabeth Wenonah Clark, B.S., A. and T. College.....	1947
Vahlia Turner Cromwell, B.S., Winston-Salem Teachers College.....	1945
Willie Currie, B.S., A. and T. College.....	1942
Charlie Harris Curry (Mrs.), B.S., A. and T. College.....	1941
Ruth Black Dailey, B.S., A. and T. College	1945
Edmonia Virginia Deloatch, B.S., Elizabeth City State Teachers College.....	1947
Montrose Lawrence DeVane, B.S., A. and T. College.....	1943
Zora Kemp Dillard, B.S., A. and T. College.....	1943
Margaret Delois Forbes, B.S., Winston-Salem Teachers College.....	1942
Wyatt Morgan Fowlkes, B.S., Johnson C. Smith University.....	1931
Van Walker Galloway, B.S., Fayetteville State Teachers College.....	1941
Juanita J. Goldsborough, B.S., Virginia State College.....	1936
James B. Haile, A. B., Morris College.....	1938
Estell Harper, B. S., A. and T. College.....	1949
Callie Jones Holmes, B.S., Winston-Salem Teachers College.....	1942
Lillian Wood Hoover, B.A., Bennett College.....	1942
Portia N. H. Jackson, A.B., Southern University.....	1940
Carrie B. Lamb, B.S., Fayetteville State Teachers College.....	1940
Esther Robinson Lassiter, B.S., Winston-Salem Teachers College..	1941
Dorothy Johnson Logan, B.S., Fayetteville State Teachers College..	1945
Martha Hood London, B.S., A. and T. College.....	1947
Rufus F. Luck, B.S.. A. and T. College.....	1939
Katye B. McAdoo, B.S., Winston-Salem Teachers College.....	1937
Annie Harper McClennon, A.B., Shaw University.....	1934
John H. McInnis, B.S., Livingstone College.....	1946
Judson Carlyle Melton, B.S., A. and T. College.....	1936
Lemuel Moore, B.S., A. and T. College.....	1939
Frank B. Morris, A.B., Howard University.....	1930
John F. E. Normile, B.S., A. and T. College.....	1929
Alma P. Powell, B.S., Fayetteville State Teachers College.....	1942
Melton J. Sadler, Jr., B.S., St. Augustine's College.....	1941
Guyrene Tyson Simkins, B.S., A. and T. College.....	1946
Margaret Nettles Simpson, B.A., Bennett College.....	1938
Louise H. Summers, B. S., A. and T. College.....	1944
Irma A. Todd, A.B., Shaw University.....	1942
Eliza Shelton Williams, B.S., Winston-Salem Teachers College....	1937
Savilla A. Wilson, B.S., Winston-Salem Teachers College.....	1935
Olivia Peace Womack, B.A., Bennett College.....	1942
Lucille Dixon Yarborough, B.S., Winston-Salem Teachers College..	1942

ENROLLMENT BY COUNTIES IN NORTH CAROLINA

Alamance	78	Jones	22
Alexander	3	Lee	18
Anson	9	Lenoir	23
Ashe	1	Lincoln	1
Beaufort	27	McDowell	1
Bertie	13	Macon	1
Bladen	28	Martin	15
Buncombe	24	Mecklenburg	48
Burke	10	Montgomery	11
Brunswick	7	Moore	25
Cabarrus	12	Nash	12
Caldwell	8	New Hanover	33
Carteret	4	Northhampton	27
Caswell	11	Onslow	8
Catawba	23	Orange	32
Camden	1	Pasquotank	11
Chowan	19	Pamlico	6
Chatham	22	Pender	24
Cleveland	23	Perquimans	5
Columbus	36	Person	18
Craven	27	Pitt	64
Cumberland	48	Polk	7
Currituck	2	Randolph	10
Dare	2	Richmond	23
Davidson	13	Robeson	68
Davie	7	Rockingham	44
Duplin	46	Rowan	21
Durham	32	Rutherford	3
Edgecombe	44	Sampson	40
Forsyth	107	Scotland	21
Franklin	16	Stanly	5
Gaston	51	Stokes	7
Gates	6	Surry	9
Granville	24	Transylvania	2
Greene	18	Tyrell	5
Guilford	361	Union	18
Halifax	35	Vance	17
Harnett	19	Wake	53
Haywood	2	Warren	24
Henderson	4	Washington	3
Hertford	26	Wayne	61
Hoke	19	Wilkes	8
Iredell	15	Wilson	46
Jackson	3	Yadkin	2
Johnston	26		

**ENROLLMENT BY STATES
1953-54**

Alabama	11
Connecticut	5
District of Columbia	14
Florida	51
Georgia	57
Illinois	9
Indiana	2
Kansas	1
Kentucky	2
Maryland	20
Massachusetts	3
Michigan	3
Mississippi	1
New Jersey	13
New York	28
North Carolina	2212
Ohio	14
Pennsylvania	18
South Carolina	137
Texas	1
Tennessee	4
Virginia	199
West Virginia	3
Wisconsin	1
British West Indies	3
Cuba	1
Liberia	1
Total	2814

**SUMMARY OF ENROLLMENT
1953-54**

Senior Class	427
Junior Class	409
Sophomore Class	521
Freshman Class	832
Special Students	17
Graduate Students	348
Trade Students	260
Total	2814
Total Enrollment, excluding duplicates, regular session, 1953-54...	2814
Summer Quarter, Undergraduates, 1953	235
Summer Quarter, Graduate Students	1290
Grand Total, 1953-54	4339

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